

In This Issue—As the Editor Sees the Automobile Business

MOTOR AGE

Vol. XLVII
Number 25

PUBLISHED WEEKLY AT 5 SOUTH WABASH AVENUE
CHICAGO, JUNE 18, 1925

Thirty-five Cents a Copy
Three Dollars a Year

To make a line that will fill every transportation need, thus making it possible for the dealer to conserve his capital by stocking Goodrich exclusively

The Goodrich 10 points of profit

- 1— A product of honest value.
- 2— Marketing through dealers.
- 3— Dealers of good standing.
- 4— Safe and permanent supply.
- 5— Dealer advertising support.
- 6— Protection of Dealers established trade.
- ✓ 7— A tire for every transportation need.
- 8— Fair and competitive price schedule.
- 9— Original equipment program with car manufacturers.
- 10— Square deal in all transactions.

TEN different Goodrich Tires back up Point Seven of the Goodrich Points of Profit. Here is a line that can meet any demand of any customer who walks into the store of a Goodrich Dealer. It is complete in types; it is complete in sizes. Whatever the service needs a customer may have, the Goodrich Dealer has a tire to meet them in performance, and in price.

With the Goodrich line, a dealer does not need so much capital for his business as he does with several brands. He stocks all sizes and types with a minimum outlay of money.

Read the other nine Goodrich Points of Profit. Each has a peculiar significance to a tire merchant; all combine to build up a permanent and profitable business.

THE B. F. GOODRICH RUBBER COMPANY
Established 1870

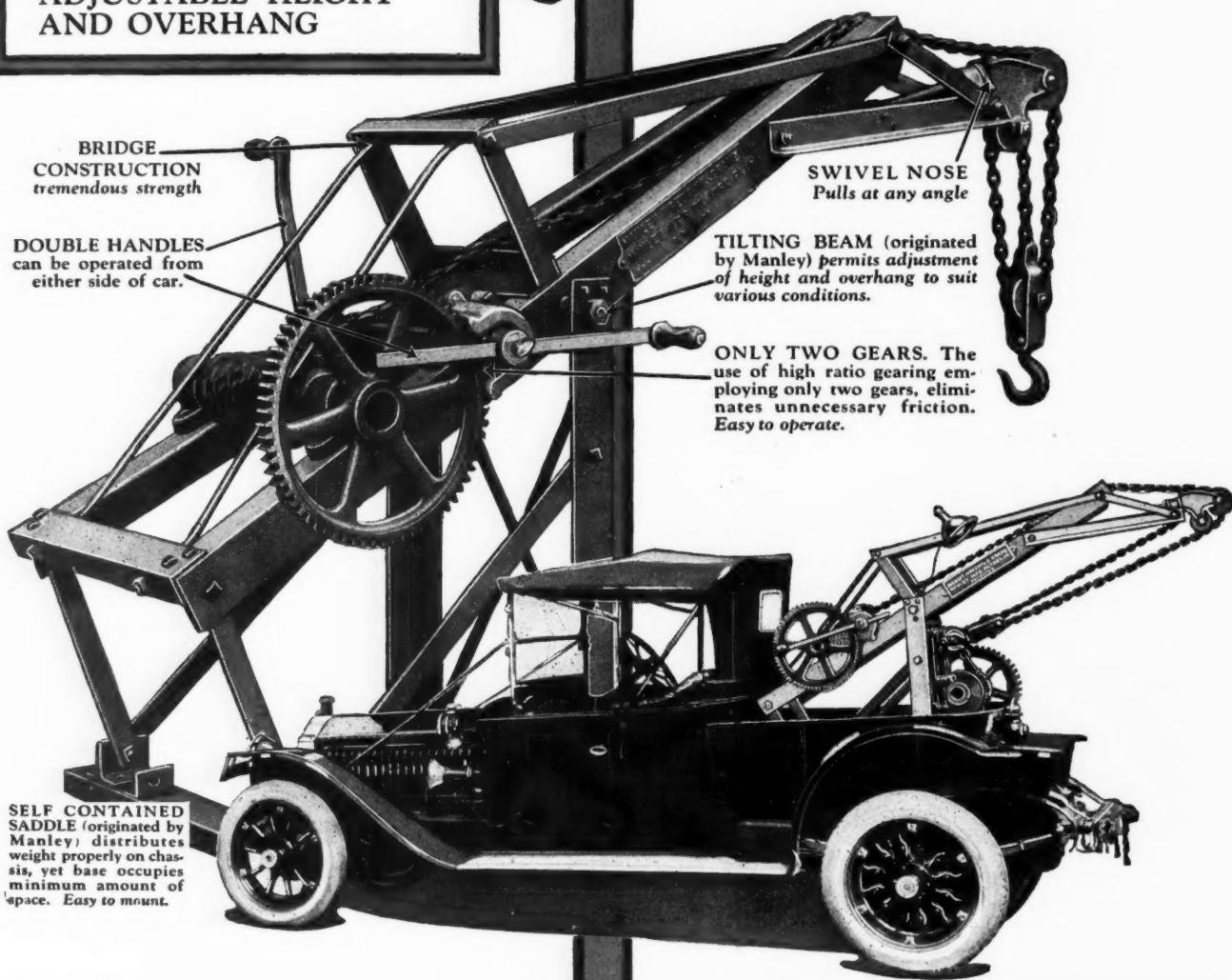
Akron, Ohio

Goodrich Tires

"Best in the Long Run"

Manley Wrecking Crane

TREMENDOUS STRENGTH
EASY TO MOUNT
EASY TO OPERATE
PULLS AT ANY ANGLE
ADJUSTABLE HEIGHT
AND OVERHANG



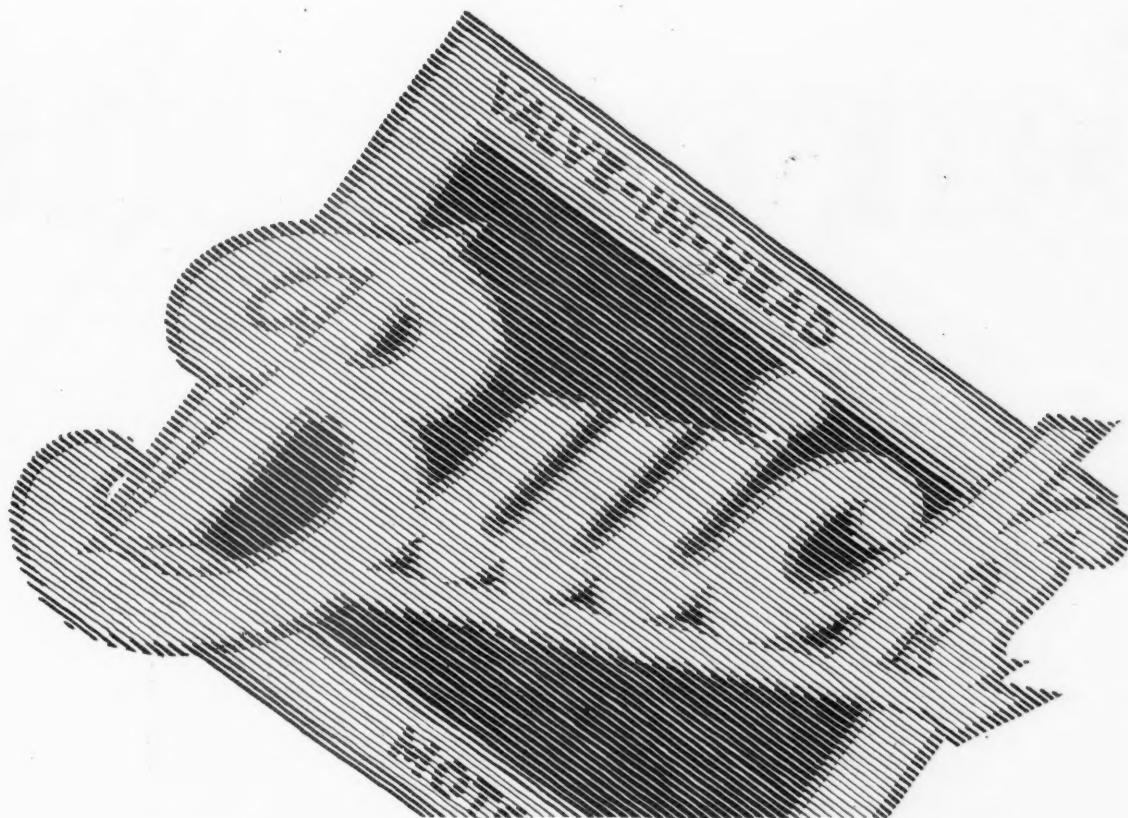
The illustration shows the No. 101, 2½ ton Manley Wrecking Crane--the most widely used wrecking crane in automotive work. Price complete \$118.

The No. 102, 2 ton capacity, similar in all respects but slightly lighter in construction, can be obtained for \$95.

Get a Manley

Buy from your own jobber.

MANLEY MFG. CO., York, Pa.



The public acceptance of Buick motor cars protects the profits of Buick dealers. They can bid the actual value of used cars offered in trade and still get more than their share of the business. Profits depend on the reputation of the new car you sell, not on discounts or trading allowances.

*Those desiring the Buick franchise
should have their names on file.*

BUICK MOTOR COMPANY, FLINT, MICHIGAN

Division of General Motors Corporation

Branches in all Principal Cities
Dealers Everywhere

Pioneer Builders of Valve-in-Head
Motor Cars

Canadian Factories:
McLAUGHLIN-BUICK, Oshawa, Ont.

Burroughs



**Simplified Accounting Plan
saves time, prevents errors
and increases profits for
this successful auto dealer.**

"All our ledgers are posted every day—balances automatically extended and proved—all in half the former time. Monthly statements are in the mail on the first. And we have all the information about our business every day."

—Chipley Motor Company
Raleigh, N. C.

Burroughs Adding Machine Co.,
6425 Second Blvd.,
Detroit, Michigan.

Please send me the folder—"Here's How We Steered to Prosperity."

Name _____

Business _____

Address _____

Let us show you how thousands of automobile and accessory dealers use this plan. Phone our local office or write for folder, "Here's How We Steered to Prosperity."

**BURROUGHS ADDING MACHINE COMPANY
DETROIT, MICHIGAN**

ADDING · BOOKKEEPING · CALCULATING AND BILLING MACHINES

MOTOR AGE

Reg. U. S. Pat. Office

Vol. XLVII

No. 25

JULIAN CHASE, Directing Editor
 B. M. IKERT, Technical Editor
 A. H. PACKER, Associate Editor
 W. L. CARVER, Field Editor, Detroit
 JOHN C. GOURLIE, News Editor
 JAMES C. GRANT, Detroit News Rep.

SAM SHELTON, Editor
 CLARENCE PHILLIPS, Ass't. Editor
 TOM WILDER, Architectural Editor
 LESLIE S. GILLETTE, Field Editor,
 Detroit
 RENAUD SHERWOOD, Ass't. News Editor

MOTOR AGE is published every Thursday by
 CHILTON CLASS JOURNAL COMPANY

Mallers Building, 5 South Wabash Avenue, Chicago

C. A. MUSSelman
 President and General Manager

J. S. HILDRETH, Director of Sales
 E. M. COREY, Treasurer
 HARRY TIPPER, Secretary

W. I. RALPH, Vice-President
 E. E. HAIGHT, Business Manager
 MOTOR AGE

Owned by United Publishers Corporation, 239 West 39th Street, New York, CHARLES G. PHILLIPS, President; A. C. PEARSON, Vice-President; FRITZ J. FRANK, Treasurer; H. J. REDFIELD, Secretary.

Cable Address, Motage, Chicago
 Telephone, Central 7045

OFFICES

New York—U. P. C. Bldg., 239 West 39th St., Phone Pennsylvania 0080.
 Detroit—7338 Woodward Ave., Phone Empire 4890.
 Cleveland—538-540 Guardian Bldg., Phone Main 6432.
 Philadelphia—56th and Chestnut Sts., Phone Sherwood 1424.
 Indianapolis—519 Merchants Bank Bldg., Phone Riley 3212.

SUBSCRIPTION RATES: United States, Mexico and U. S. Possessions, \$3.00 per year; Canada, \$5.00 per year; all other countries in Postal Union, \$6.00 per year; single copies, 35 cents.

Member of the Audit Bureau of Circulations.
 Member, Association Business Papers, Inc.

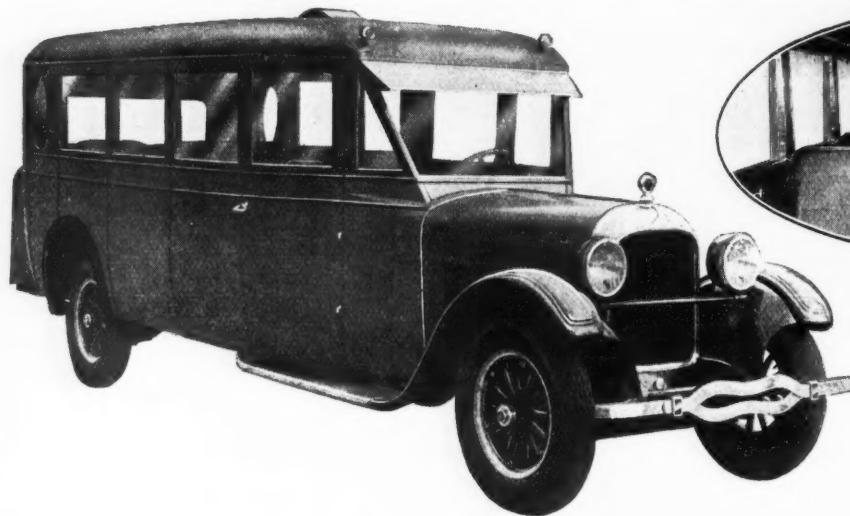
Copyright, 1925, by CHILTON CLASS JOURNAL COMPANY

CONTENTS

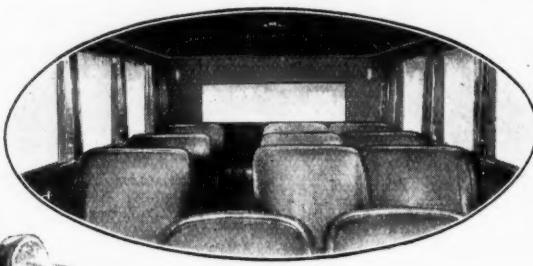
Summary and Index of Automotive News.....	9
As the Editor Sees the Automobile Business.....	10
By Sam Shelton	
Conserve the Shows.....	11
By Herbert Buckman	
Application of Pyroxylin Finishes.....	12
By B. M. Ikert	
Steam Cooling for Automobile Engines.....	14
By Herbert Chase	
A New Steam Cooling System for Fords.....	15
Electro Magnets—The Basis of Generator Fields, Magnetizers and Cutouts.....	16
By A. H. Packer	
New Elcar Six and Four Models.....	19
Hupp Club Four Sedan Improved.....	20
New Gardner Six Sport Sedan.....	20
New Reo 2-Ton Speed Wagon.....	21
MOTOR AGE'S Picture Pages.....	22-23
The Readers' Clearing House.....	24
The Market's New Offerings.....	29
Getting More Out of the Shop.....	30
Editorial.....	31
News of the Industry.....	32-43
Along Automobile Row.....	40
With the Associations.....	41
Coming Motor Events.....	42
Squeaks and Rattles.....	43
Specifications.....	44
CLASSIFIED ADVERTISING SECTION.....	103
INDEX TO ADVERTISERS.....	104-105

Subscriptions accepted only from the Automotive Trade
 Entered as Second Class Matter Sept. 19, 1899, at the Post Office at
 Chicago, Ill., under Act of March 6, 1879.





Model 50-B
Chair Coach



TWO NEW MILLER-BUILT MODELS

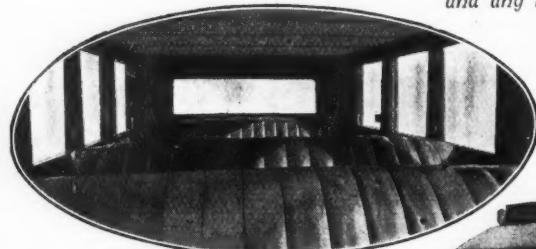
Mounted on Studebaker Big Six Chassis

THESE two new Miller-Built Models mounted on the Big Six Studebaker Chassis have set a new standard for comfort, ease of riding, dependable service and value.

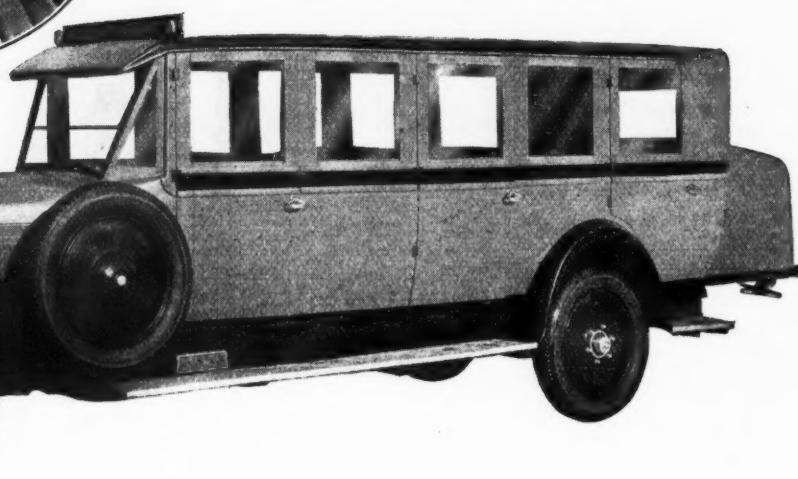
The individual parlor car type seats, the wide aisle and the spacious windows, ideal for sight-seeing, make the 50-B job a popular coach. The 25-B job, shown with crosswise seats, may be also had with the individual chair seats, without extra charge. Both of these new designs are made in 12, 15 and 19-passenger models.

They are truly "the Parlor Cars of the Highways." Smooth, quiet, no jolts, no jars, no vibration, no noisy, rattling doors or windows. More pleasure and profit for the operator.

*Write today for specifications, prices,
and any further information desired*



Model 25-B
Sedan



The A. J. MILLER CO.
BELLEFONTAINE, OHIO

Something Every Dealer Should Read!

THE SATURDAY EVENING POST

June 20, 1925

AN IMPORTANT CHANGE IN POLICY

STUDEBAKER herewith announces the discontinuance of the custom of presenting a new line of automobiles each year. Instead of bringing Studebaker Cars dramatically up-to-date once in twelve months we shall keep them up-to-date all of the time—with every improvement and refinement made available by our great engineering and manufacturing resources. This policy not only directly benefits present Studebaker owners, but it also enables purchasers of new cars to obtain models that are always modern—without the necessity of waiting for annual changes, and without the danger of their new cars becoming obsolete.

BACK of this new policy is an amazing story—of interest to everyone who owns or expects to own an automobile.

The dramatic success of the present line of Studebaker Cars is one reason for this important change. Month after month we keep breaking records—sales keep piling up. This year we will sell almost four times as many automobiles as we produced in the big boom year which followed the war.

Owners report endurance records, even beyond our greatest expectations. Out in the rugged mountain regions where Studebaker sells four times its normal proportion of cars, owners talk about these models in the most extravagant terms. In 1924 the Corporation's sale of repair parts dropped to \$10 per car per year. Mechanical stamina under severe usage—remarkable performance under the most difficult travel conditions—these are the qualities for which Studebaker cars have long been noted.

Extensive investigations, recently conducted, have revealed only two very minor suggestions for improvement of the present Studebaker line—the addition of color in the alluring tones made possible by our new lacquer finish—and a change in the appearance of the radiator shell of the Standard Six.

Surely, these significant facts prove beyond any shadow of doubt that Studebaker Cars are so soundly engineered and manufactured and so eminently satisfactory in the hands of owners, that drastic annual changes are not required.

Improvements and refinements will be made from time to time. New features will be added. When our engineering department (maintained at a cost of more than half a million dollars a year) devises an improvement in any model it will be made with our regard to the calendar.

As in the past, we shall continue to pioneer vital betterments that have proved their merit through practical use. Alert, aggressive, receptive to new ideas, resourceful in executing them, guided by scientific research and spurred by imagination, the Studebaker organization proposes to build better motor cars than ever before.

Now you may buy a Studebaker on any day of the year with the confident assurance that the sturdy, thrifty, one-profit car you drive away will not be stigmatized by any act of ours as a "last year's model." Today in even more generous measure than in the past, Studebaker Cars offer the utmost value for the money.

THE STUDEBAKER CORPORATION OF AMERICA, SOUTH BEND, INDIANA

STUDEBAKER MOTOR CARS

Nash Leads the World in Motor Car Value

Nash Sales Increase Averages 68% Monthly for Past 9 Months

Here is a situation that provides every good motor car dealer with food for thought—and reason for action.

During the past 9 months ending May 31st the average Nash sales increase per month has been 68%.

At the same time, and for the same identical period, total sales for the entire industry have shown a heavy average monthly *decrease*.

One significant thing about this rapidly growing national demand for Nash Special Six and Advanced Six models is the undeniable proof it provides as to the exceptional value offered in these cars.

But an equally important aspect—and one of profound appeal to every good dealer—is the fact that this extra 68% in Nash business is being handled without the slightest increase in overhead so that it represents to Nash dealers *just that much more clean net*.

NASH

THE NASH MOTORS COMPANY
KENOSHA, WISCONSIN

(1898)



RAMCO

What Is the Primary Purpose of Inner Rings?



THE answer is, to give to piston rings that which heat and wear takes away. The best of piston rings wear—they must to save the cylinder. And motor heat gives them a permanent or "dead" set. The results are evident.

*Only Ramcos Give the Elasticity
Taken by Heat and Wear*

They fit easily behind the piston ring, maintaining a perfect ring-to-wall contact and centralizing the piston. They have not the harsh tension found in other inner rings where concave sides and any number of crimps are used.

Ramcos have six sides regardless of piston size. This gives you an unchanging ratio between the inner ring and piston with the result that a uniform and correctly determined cushion effect is obtained. The Ramco steel, made to withstand any motor temperature, maintains that cushion effect.

Ramcos will stop oil-pumping and piston slap by maintaining the piston ring's elasticity. They offer you an extra profit and customer satisfaction.

Order from Your Jobber or Direct

RAMCO
Cushion
INNER RINGS

REG. U. S. PAT. OFF.

RAMSEY ACCESSORIES MFG. CORP., St. Louis, Mo.



Mounting sales figures in the weekly reports for the United States show the Chrysler Six—already a record breaker in popularity—is soaring higher than ever before.

Chrysler dealers are making more money than ever before.

Get the complete facts about the Chrysler franchise—the greatest money-maker available today. Write now.

All Chrysler dealers are in position to extend the convenience of time-payments, on a plan that is attractive to the buyer.

CHRYSLER SALES CORPORATION, DETROIT, MICHIGAN
CHRYSLER MOTOR COMPANY OF CANADA, LTD., WINDSOR, ONT.

CHRYSLER SIX

MOTOR AGE

Vol. XLVII

Chicago, June 18, 1925

No. 25

Summary and Index of Important Events in This Week's Automotive News

*Detailed Stories from MOTOR AGE Staff Writers and Special
Correspondents Appear in News Section Beginning on Page 32*

COMPETITIVE conditions, rather than basic reasons governing present price reductions, according to opinion in trade. Page 32.

Oakland launches nation-wide educational campaign for benefit of dealers. Page 33.

Price reductions by Apperson bring company's list to lowest level in its history. Page 38.

Ernest M. Howe, British transportation expert, elected president of Gray Motor Corporation. Page 39.

Sales and production for Nash in May highest for single month since company began business. Page 39.

Oakland will supply repair parts for Scripps-Booth cars through its dealer organization. Page 37.

Rollin wins Yosemite Valley Gas Economy sweepstakes, Oakland second and Roamer third. Page 36.

Three production records made in May by Paige-Detroit as result of demands for immediate deliveries. Page 36.

Ford assembly plant will remain at Indianapolis until after election in Fall. Page 34.

Sales of Dodge Brothers cars for last five months break all records. Page 34.

New Heavy Duty Speed Wagon listing at \$1,985 announced by Reo Motor Car Company. Page 38.

High automotive production will continue well into second half, believes R. H. Grant, Chevrolet sales manager. Page 38.

Chevrolet plans greater Fall selling campaign. Page 33.

J. W. Leavitt & Co. now controls Peerless distribution on Pacific Coast. Page 33.

Auburn introduces six-passenger roadster on both six and eight-cylinder chassis. Page 32.

Chevrolet produced 52,853 cars and trucks in May. Month closed with 30,709 unfilled orders on books. Page 39.

Ohio tradesmen hear A. R. Kroh, representing N. A. D. A., deliver inspiring merchandising talks. Page 37.

Gain in Ford sales in Detroit is believed due to low initial payment plan. Page 37.

Many Dodge Brothers service men attend factory school held in St. Louis. Page 35.

Ford Motor Company, of Canada, returns to schedule of five days a week. Page 35.

New corporation formed to continue business of Dorris Motor Car Company. Page 36.

Vigorous campaign for removal of wartime excise taxes on motor vehicles planned by N. A. C. C. Page 41.

Toledo Automotive Trade Association behind movement for Sunday closing. Page 41.

Expansion of body factory at Racine planned by Murray corporation. Page 43.

Overland Six price cut is followed by increased orders. Page 43.

Excellent reception accorded Ajax at first show room display in Chicago. Page 43.

In Next Week's Issue—A New 8-Cylinder Automobile

As the Editor Sees the Automobile Business

Random Observations on Sales and Service

BY SAM SHELTON

WHEN I go touring I like to stop in the small towns and visit with automotive merchants who succeed above all others in getting close to their customers. The small town dealer knows most of the people in his community and his customers are likely to call him Tom or Bill or Henry or whatever other informal title he goes by among friends. For instance, in a certain Wisconsin town recently everybody I spoke to told me about "Skinny" Poole, the Buick dealer. And when I met "Skinny" I knew that nothing in the world but genuine affection had inspired the picturesque name that, when endowed with an opposite meaning, so adequately described the outstanding physical characteristic of its bearer.

Mr. Poole ("Skinny") was thoroughly representative of something like 62 per cent of the automobile dealers in the United States, that being the proportion found in towns of less than 10,000 population. Mr. Poole had been in business a number of years and had done fairly well, but he was not satisfied with his plant. He had a good location, on a prominent business corner, but the building was old and not designed for the automobile business. Yet he was trying to serve the car owner completely.

His aim, however, is a modern establishment where the car owner will be able to buy anything he needs in connection with motoring and obtain any necessary service on his car under one roof. To that end Mr. Poole is planning to put up a new building. And when he does he will equip it completely with the latest labor saving machinery, and of course he expects to carry a very complete stock of standard automotive merchandise—no freak stuff for him, but just practical merchandise that the car owner will want and buy.

Thousands of other automotive dealers in small towns and large ones are in much the same position as Mr. Poole. Their buildings—like his—were not designed for automotive use. They are at best make-shifts, and like Mr. Poole the proprietors are putting off installing much needed equipment until they are ready with a new building.

Many of these dealers could build much sooner than they expect to if they would obtain expert advice on their requirements (such as Mr. Wilder of the MOTOR AGE staff

is prepared to give), for they would find that a building held out especially for the use they expect to put it to, and properly equipped, would start earning profits for them right away.

So many dealers make the mistake of building too large or too small. In a small town where I was recently it was common gossip in business circles that the automobile dealer with the largest plant in town was in financial stress to the extent that he had just narrowly averted bankruptcy. He was doing a tremendous business. He represented two well-known makes of cars and he had two large buildings several blocks apart. Conservative business men were of the opinion that he had over-expanded. He had tried to grow too fast. They felt that if he had operated with only one of the buildings and somewhat less volume he would have been able to make a profit.

As it was, overhead was getting the best of him. Overhead and poor judgment in the extension of credit. Business on his books for which there was no immediate prospect of collecting was said to have been enough to tide him over if he could have realized on it. And he was in a community where it was possible for him to know everybody well enough to have avoided this credit trap.

Yet the dealer himself was optimistic. He felt that he would pull through all right. He had quite a stock of accessories, tires and the like and was planning to put in a radio department this fall. He has no illusions about the radio business. He does not expect it to make him a fortune without effort. He realizes that the automobile business is built on service and that service is necessary in the radio business. Much of this service can be rendered by his battery and electrical repair department. He intends to put on a special radio service man.

But he has no intention of giving up the automobile business. He doesn't figure that he is through. He was a bit discouraged right at the height of the selling season because he had some difficulty in getting cars to fill orders for certain types. But he was looking to the future.

(Another article in this series will be published in next week's MOTOR AGE.)

A NEW SERIES OF PRACTICAL ARTICLES

PYROXYLIN, or nitro-cellulose, paints are rapidly becoming the predominating finish for automobiles. A very large proportion of the new cars coming from the factories are finished with one of the modern nitro-cellulose painting systems, and throughout the country dealers and automotive paint shops are doing a big business in refinishing old cars with these modern materials.

*The painting time is cut two-thirds or more.
The finish endures much longer than ordinary finishes.*

The car may be cleaned easily and quickly without marring the finish.

The average dealer has plenty of space and workmen competent enough to use the system.

The equipment costs very little in proportion to its business possibilities

The foregoing are some of the advantages of the pyroxylin painting systems. In a new series of articles, the first of which was published in last week's MOTOR AGE, B. M. Ikert, Technical Editor, goes into all the phases of pyroxylin painting for the automotive merchant, and shows clearly just what steps are necessary to successfully use one of the systems.

This week's article on page 12 is the second of the series.

There will be one article each week until this comprehensive series is completed. It will pay every MOTOR AGE subscriber to follow this series closely and not miss one, for it is often impossible for the publishers to supply back numbers. The whole series will comprise an exhaustive textbook on the subject of pyroxylin finishes from the standpoint of the automotive merchant.

Conserve the Shows



Annual Automotive Exhibitors Are an Asset to the Trade and Dealers Should Prepare to Get Value Out of Them, Says Veteran Association Manager

Herbert Buckman

By HERBERT BUCKMAN

Manager Cleveland Automobile Manufacturers' and Dealers' Association

HOW do you automobile people get away with it? "I can't get people to pay admission to my place of business to see things they are going to buy from me."

The speaker was a department store executive and we were standing near the entrance of the automobile show. Thousands of people were thronging past us, having laid down 50 cents to see the products of the automobile industry.

He was voicing a sentiment that many men in other lines of business have similarly expressed. Not only have other trades wondered at the continued success of the automobile shows but they are frequently imitating or seeking to emulate the method.

Three million people paid to see the automobile shows last winter in two score cities of the country. It is unmatched in commercial achievement. The automobile industry must now make a conscious and determined effort to conserve, carry forward and increase the show asset.

Growth of the Show Idea

Twenty-five years ago when the industry was in swaddling clothes and the motor vehicle itself more or less of a novelty, the shows came into being. There were then two shows, the national exhibitions staged by the manufacturers in New York and Chicago. Today there are a dozen shows in the bigger cities drawing more people than did the national shows of a few years ago, and there are 100 or more other shows in somewhat lesser cities.

The accessory exhibits that once were stuck away in corners or placed inconspicuously in basements now comprise one of the big features presenting comprehensive displays of those various articles pertinent to the use, maintenance and enjoyment of our cars.

As the department store executive expressed the envy which other lines of business admit in regard to the automobile shows, two questions are presented:

(1) Does the automobile industry take the yearly success of the shows too much for granted and fail adequately to appreciate their merchandising value?

(2) Is this take-it-for-granted attitude liable to cause under-development of the show asset?

These are questions which every manufacturer, every dealer, every show committee, every accessory concern should ask itself now.

What are some of the means we can use to keep the shows moving forward in interest and profit?

First, let us learn to appreciate our own shows as much

as other lines of trade admire them. Let us realize what they do for us year after year and determine upon a policy of encouragement, progress and growth.

Let us bring forward in these shows the qualities of interest; let us emphasize those features drawing new favor and enthusiasm from the public. If we find the makes of cars growing somewhat less, let us make the remaining exhibits more impressive and more interesting. If the cars become increasingly standardized so that radical developments are fewer, let us accentuate interesting phases of use, operation and maintenance.

Interest Must Be Kept Alive

That the public is still interested to a tremendous degree in things pertaining to the automobile business is easily and readily proved. Step into any considerable gathering of men or women, any time there are more than a dozen persons gathered in one place, and the automobile and the motor car business are an invariable topic of discussion.

The work of encouraging such worth-while show development can readily be furthered by some of our trade organizations, national as well as local. The shows are worthy of the best thought.

Our car factories will help themselves and their dealers by helping in the formation of interesting displays. The cut-out chassis idea has countless variation possibilities. In the 1925 shows, one manufacturer campaigned extensively with special chassis beautifully painted and decorated. In every show that chassis was a center of interest, and that particular manufacturer ever since the shows has been enjoying an unusually fat year after several lean ones.

In the field of accessories, the possibilities are almost beyond limit. Those manufacturers of supplies or equipment whose product is shown by distributors will find it profitable to prepare exhibits of lively interest available to the distributors making the display. This will insure adequate representation and help the exhibitor make up a display of something more than signs.

Much can be done with the shows themselves, working into them numerous features pertinent to the motor car's manifold contacts with life of today.

By taking ample thought, by realizing the tremendous achievement of the shows year after year, by developing the interest which the public annually displays, the shows can be carried forward into assets of still greater value to every branch of our industry.

Application of Pyroxylin Finishes

Satisfactory Results Depend to a Large Extent Upon the Equipment Used. Important That Shop Be Properly Ventilated. How to Handle the Spray Gun

By B. M. IKERT

IN applying nitro-cellulose finishes it is very essential that the shop be properly equipped not only with the necessary apparatus for spraying the materials, but with facilities for carrying off the spray dust and fumes.

Although lacquer spraying does not require a dustproof room, good ventilation is essential and there should be one exhaust fan in each spray booth. Ordinary ventilating fans are not recommended for this. It is far better to use what is known as an exhaust fan and this should be 24 in. in diameter.

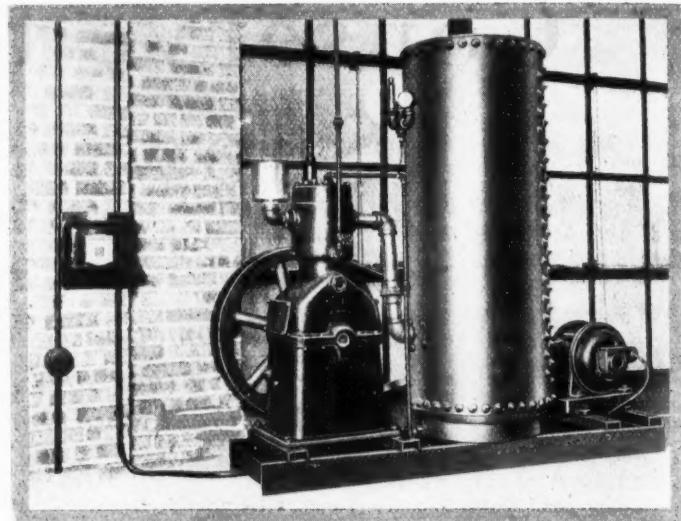
In some instances where booths are temporarily built of wall board or plaster board the fans can be mounted on wood panels to fit the windows. For permanent booths it probably is better to install a more elaborate exhaust system. One of these systems is designed to pull the fumes and spray dust down away from the coated surface and the operator's face.

Need Plenty of Oxygen

One of the essentials of good drying is plenty of oxygen and proper ventilation is, therefore, a most important point to watch. Draughts of cold air or even warm air must not strike the job direct, since they are likely to chill the materials and to carry dust on the finish before it is dust free.

The first operation on a car to be finished with the nitro-cellulose system is that of stripping, that is, taking off the old finish on the car. If some of the enameled parts such as the fenders and hood are in good condition, it will not be necessary to remove the enamel and it is sufficient to only sandpaper it, making sure all of the rust spots are completely removed.

Stripping can be done by any of the approved methods and for general practice on steel one of the alkali and steam or alkali and hot water systems will give good results, because by this method the danger from wax in ordinary varnish removers is done away with. If an alkali system is used, it must be flushed with enough clear water to be sure that all the alkali is removed.



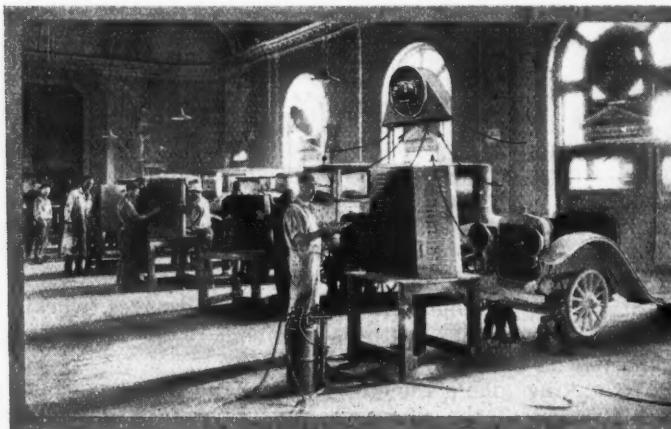
The air compressor unit should be carefully chosen, paying particular attention to the size. Too often the mistake is made of buying too small a compressor. The compressor may be driven direct or from line shafting.

Varnish remover should be used on aluminum bodies in preference to the alkali process, as the latter tends to injure aluminum unless great care is taken. Where varnish remover has been used and a small amount of wax left on the surface in spots, the nitro-cellulose primer will fail to dry on such spots, a distinct advantage of such a primer, as it shows up poorly cleaned metal instead of temporarily hiding it.

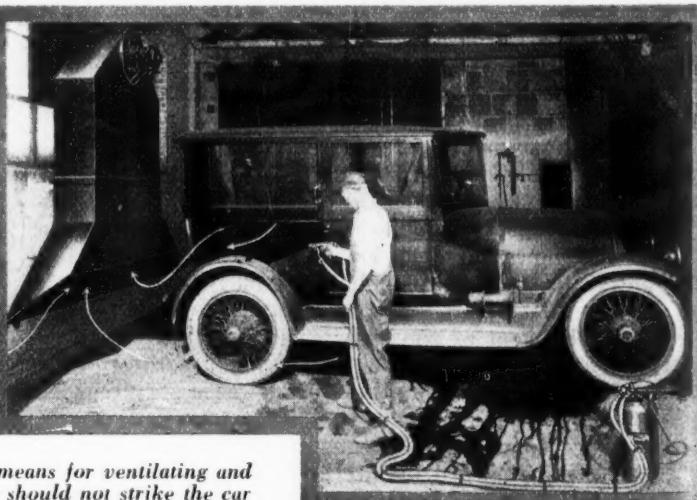
Sandblasting May Be Used

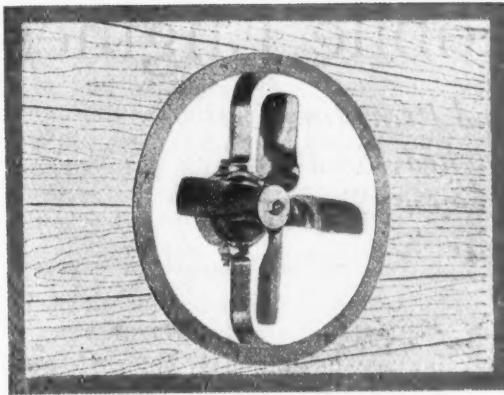
On open cars, particularly, sandblasting may be used to remove the old finish. Sandblasting leaves an ideally clean surface and does away with all danger from moisture or wax. It cannot be used, of course, on wood panels.

As with any paint system, rust is an enemy of lacquers and this must be completely removed before the primer is sprayed on. It also is well to spray the primer on immediately after the metal has been thoroughly cleaned. Cleanliness cannot be over emphasized in the application of nitro-cellulose finishes and this applies not only to the surface to be covered, but to the apparatus used. The spray guns, cups, buckets, etc., must be kept free from dirt, grease and all foreign matter.



It is essential that the shop using pyroxylin finishes have adequate means for ventilating and carrying off the spray dust and fumes. Draughts of cold or warm air should not strike the car being finished





Above—An exhaust fan which can readily be placed in a window, since it is mounted upon a wood panel, making it possible to slip the apparatus inside a window frame in much the same manner as a screen. Right—Typical layout of a spraying booth for applying pyroxylin finishes. The air line runs across the front of the booths and as many booths can be added as the business warrants, providing the compressor is large enough to take care of the added spray guns.

It is, of course, well known by this time that nitrocellulose coats cannot be applied with a hand brush, but must be sprayed on, and for this there are a number of makes of spray guns on the market which are very successful for this work.

Different operators seem to favor different equipment and each equipment is usually handled in a slightly different way. It is recommended that an air compressor plenty large enough to handle future work be installed. The pressure generally used for applying the finish is about 60 lb. per sq. in., and in the actual handling of the brush the following is suggested:

The air brush should be held about 4 in. from the surface, being sure to apply the material "wet," which is the secret of successfully applying nitro-cellulose materials, and getting a smooth finish. The pressure at which this enamel is most successfully applied should run between 40 and 60 lbs. However, this varies somewhat in certain materials, and it is advisable to experiment to determine the most practical pressure for the material being used.

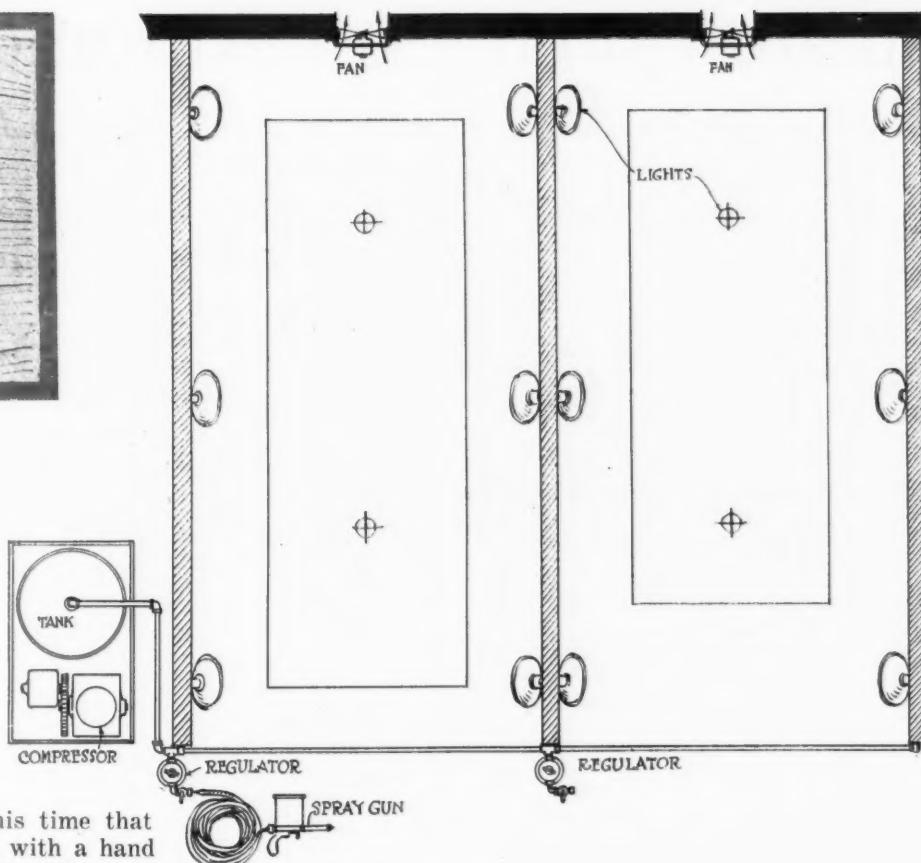
Protect Color by Masking Off

Where a two-color job is being turned out, it is advisable to protect one color from the other by masking off, and a most satisfactory means of accomplishing this by the use of parchment paper applied with ordinary flour and water, or paperhanger's paste, which is easily washed off with water later. In the case of a closed car, finish the lower portion, then protect as above recommended, and apply finish coats to upper portions. It is advisable to sandpaper with No. 7-0 waterproof sandpaper between coats.

If a high luster is desired, it may be obtained by rubbing the surface with rotten stone and oil with a soft felt pad.

A rubbing machine will do that work two or three times as fast as hand rubbing.

Care should be taken to use the air pressure at the most satisfactory degree in applying nitro-cellulose enamels, as too high a pressure will invariably result in a pebbled or orange peel finish. This will require considerable labor to smooth out, and which must be removed before applying



the next coat. Too heavy a coat will also tend to create this pebbled effect.

Blushing is usually due to moisture in the air line, or a general humid condition in the finishing room. Care should be taken to avoid any direct draft upon the work. Where blushing occurs it should be rubbed down and re-coated, care being taken to remove all moisture from the air line. Drain the water and oil separator thoroughly once or twice every day.

Surface Is Primed

After the metal has been thoroughly cleaned the surface is primed with any of the standard makes of metal primer. This should be spread on rather lightly and only a medium coat applied. It should dry preferably over night and it must be thoroughly dried before attempting to apply succeeding coats. The primer should carry sufficient color such as red oxide of iron to enable the operator to see whether or not an even coat has been applied. Some of these primers dry at room temperature in 30 minutes, after which the next coat can be applied.

A complete nitro-cellulose system includes the use of a spot putty for use over screw heads or very deep surface defects. It is applied with a putty knife in the usual way and dries in half an hour. It may be either applied over the gun-glaze or over the primer, the former practice being preferred.

The final coat of nitro-cellulose finish is the enamel coat. Most of the paint makers have taken great pains to provide an enamel which sprays smoothly and dries with a particularly beautiful sheen. It is supplied as clear material and in a wide variety of colors. The enamels are supplied in non-settling liquid form and should be thinned with equal parts of solvent before spraying. Two or three coats of enamel are usually sufficient, and owing to its unusual rapid drying properties, all enamel coats may be applied in one hour.

The average consistency at which various nitro-cellu-

(Continued on page 38)

Steam Cooling for Automobile Engines

System Requiring Small Amount of Water and Providing Uniform Operating Temperature, Quickly Reached, Said to Be About Ready for General Use—A Replacement System for Fords Announced by Rushmore

By HERBERT CHASE

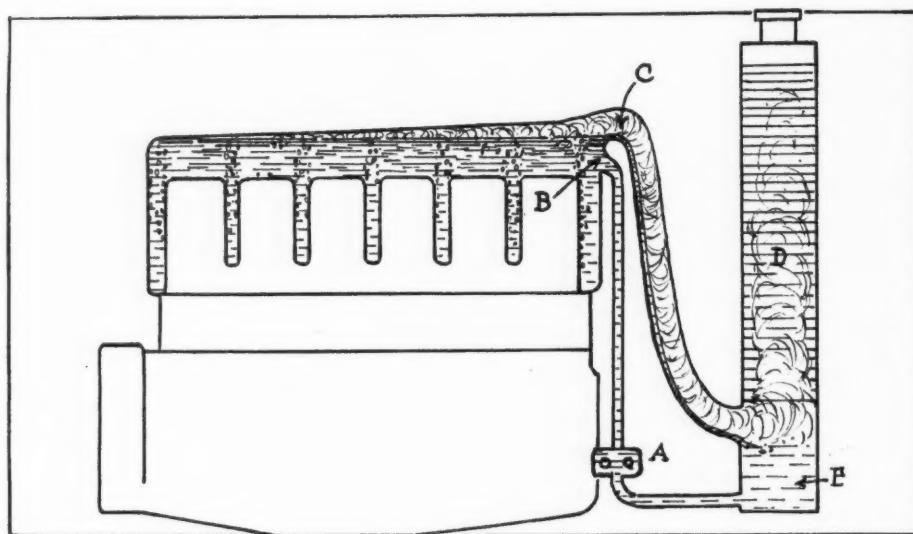


Fig. 1.—Diagram of Rushmore steam cooling system showing all essential elements in their simplest form. A—water pump; B—water inlet to cylinder jackets; C—outlet for steam and overflow water; D—steam condensing in radiator; E—reserve water Supply.

STEAM cooled, as well as steam heated, cars are coming. They have been on their way for some years and have undergone the usual process of development required of all new things placed on the market by the automotive industry. One of the most prominent concerns in the industry is reported to have had 300 steam cooled cars in operation for some months and many other concerns have done experimental work with them. One replacement system, to be described hereafter, is already on the market.

Paradoxical as it may seem, the steam cooled car is not cooled by steam at all, but rather by the conversion of water into steam. The engine jacket remains filled or substantially filled with water, but instead of circulating this water at a rapid rate, as with ordinary pump circulation, the water is allowed to remain in the jacket until it boils and a small pump supplies water to keep the jacket filled, or make up for the water evaporated into steam.

Steam thus formed passes to the radiator where it is condensed and returns by gravity to the bottom tank of the radiator, the core of the radiator remaining empty except for the

steam. The system is a closed one and since practically no steam escapes no water (or alcohol) is lost under normal conditions. Even leaks in the radiator core are of small moment, for the amount of steam which escapes is practically negligible as compared to the amount of water which would escape from a similar hole.

Steam, or evaporative cooling as some prefer to call it, is far from be-

ing new on stationary engines. Such engines have an enlarged jacket or hopper which is filled with water which gradually boils away when the engine is run. In some cases a radiator is placed above the jacket and the steam which enters it is condensed by a draft of air from a fan which is placed next to the core. Such an engine will run for weeks at a time without renewal of the water supply for all the water evaporated is condensed again.

Little Circulation Till Boiling Point

As most users of cars with thermosyphon cooling know, but little circulation takes place in the system until the water starts to boil. Then part of the cooling is done by the process of making steam, but since the radiator is filled with water, much of the steam is not condensed and is lost through the overflow pipe. Partly for this reason an enlarged upper or reserved tank at the top of the radiator is provided, to carry extra water for long trips. With steam cooling this large tank is not required and practically no steam is lost.

Furthermore, since the temperature of the steam entering the radiator is higher than that of water, a smaller or shallower and lighter core can be employed. Also the water in the cylinder jackets has a higher average tem-

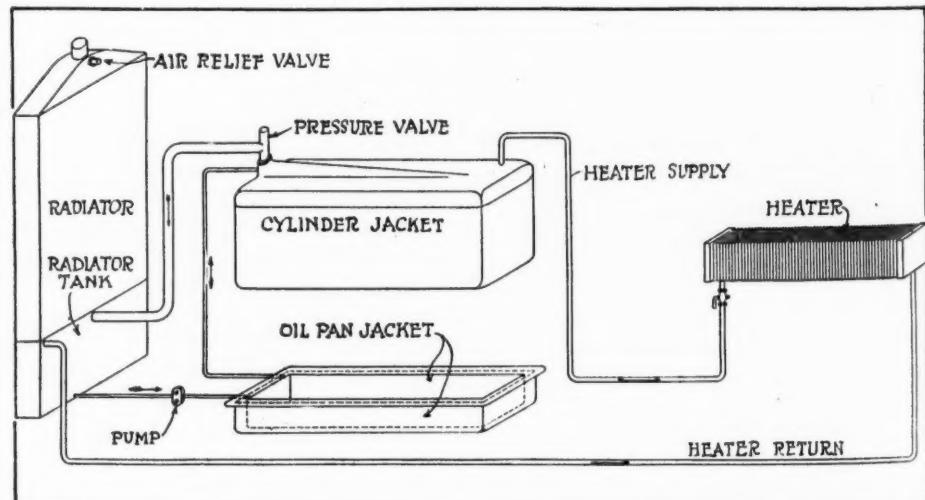


Fig. 2.—Diagram of combined Rushmore steam cooling and car and crankcase heating system.

perature in the case of steam cooling systems and attains this temperature rapidly. This enables a quick warm up in cold weather and without any thermostats maintains the cylinder walls at a desirable temperature from a standpoint of minimizing dilution of crankcase oil with fuel and contamination of the oil with water.

Permits of Steam Heating Also

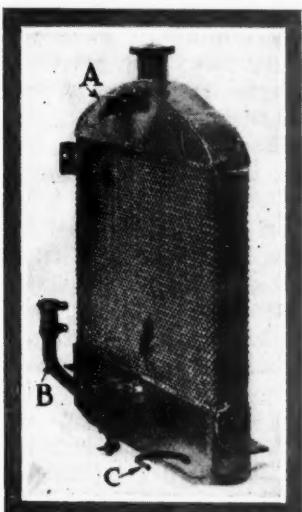
Beside these advantages steam cooling permits also of steam heating, first of the body of the car and second of the oil pan and the oil, the latter being especially desirable in winter, when the oil seldom attains a good working temperature in normal service.

The foregoing advantages are claimed for the Rushmore steam cooling and steam heating system, which is now being exploited commercially.

An understanding of the Rushmore system in its simplest form can be had from the diagram, Fig. 1. In general this system is not unlike the ordinary water cooled engine system with pump circulation, but most of the piping is smaller, being $\frac{1}{4}$ in. copper tube, except for the jacket outlet pipe which is hose of the same size normally used. In this case the jacket outlet leads to the bottom radiator tank instead of going to the top radiator tank as in all water cooling systems.

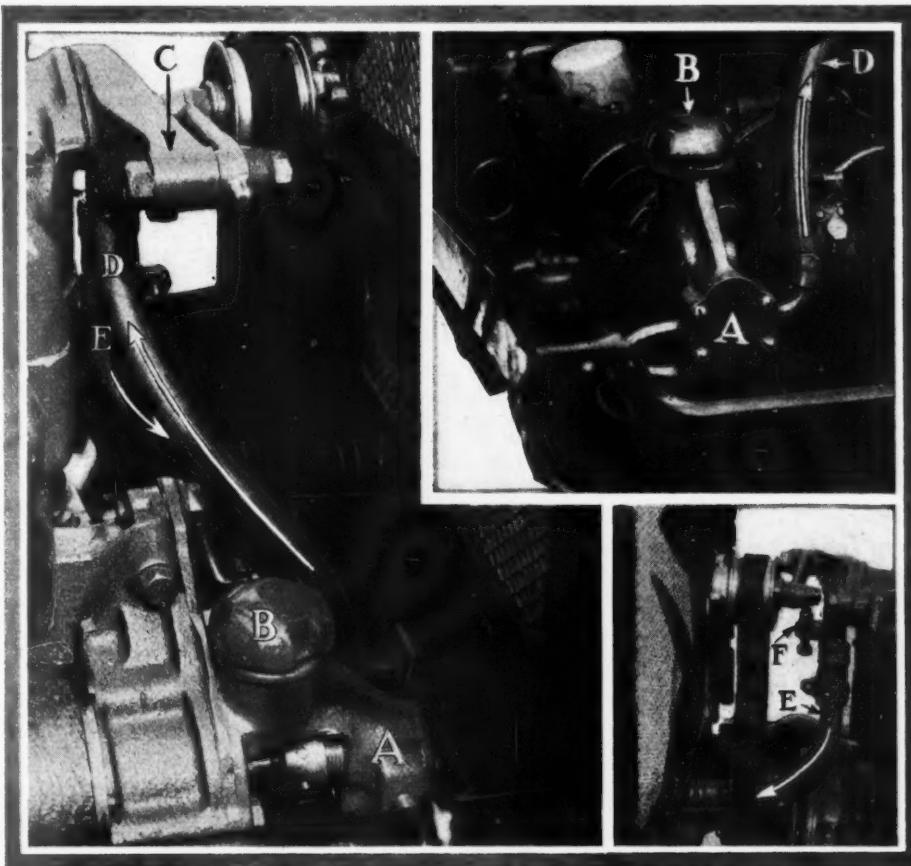
Both the water inlet and the steam-and-water outlet of the engine jacket are at the top of the latter, so that the jacket remains filled with water to the overflow level. This level is maintained by a small gear pump which draws water from the bottom tank of the radiator and delivers it to the top

(Continued on page 18)



The special radiator used with the Rushmore system for Fords showing the relief valve A, steam connection B, water outlet C and the large lower tank D

A New Steam Cooling System for Fords



Left—Rushmore steam cooling system installed on Ford engine. The pump is shown at A and the oil filler B is incorporated in its housing. Steam passes from the jackets to the radiator through the pipe E and after being condensed, is pumped back to the jacket through the pipe D. Upper right—The pump installation. Lower right—The fan bracket and adjustment for belt tension

IMPROVED engine performance, particularly in cold weather, greater gasoline mileage and better lubrication are among the advantages claimed for a steam cooling system for Fords which has been brought out by the Rushmore Laboratory, Plainfield, N. J. The complete equipment consists of water pump and necessary connections and fittings, which are priced at \$12, and a special radiator listing at \$15, the same as the standard Ford core. The time required to install the system is said to be one hour.

As positive action is essential, a gear type pump is used. It is mounted on the cylinder front cover (Ford part No. 3009C), a base being provided for it by milling off the oil filler. As this milling operation cannot be performed economically in the service station, a cylinder front cover with oil filler removed is furnished as part of the Rushmore equipment in exchange for the one removed from the engine. The cylinder front cover bolts are used to secure the pump on this base. Provision is made for supplying oil to the crankcase by casting an oil filler integral with the pump housing. The fan bracket also is sawed off the cylinder front cover.

The rear end of the pump shaft is

square and fits into a square hole in washer which is pressed into the recess in the generator drive gear. This provides the drive for the pump. In place of the Ford water outlet on the front end of the cylinder head a casting is installed which serves both as a steam outlet and a water inlet. The adjustable bracket supporting the fan is also mounted on this casting. The design permits easy adjustment of belt tension and the timer is said to be more accessible. A cover is provided for the regular jacket water inlet, which is not used.

Special Radiator Used

The special radiator used with the Rushmore system is shown in Fig. 4. It will be noted that the large top tank is eliminated, which change provides clearance for the fan in its raised position, and that a comparatively large lower tank is provided. Water is put into the system through the radiator filler in the conventional manner. Only about two gallons are required. The steam pipe connecting the cylinder head with the lower tank of the radiator is $\frac{3}{8}$ -in. diameter and the water inlet pipe is $\frac{1}{4}$ -in. inside diameter.

Electro Magnets— The Basis of Generator Fields, Magnetizers and Cutouts

*Bill Fixit's Roaming Trouble Shooters
Explain the Action of Electricity in
Producing Magnetism.*

By A. H. PACKER

FLUFFY sat on the shelf above Jake's bench and winked one eye at the top job Jake was doing. It was a drowsy day. The electric fan at the end of the bench blew its breath this way and that. Now it fluttered Jake's flannel shirt, then ruffled the fur on the sleepy cat and on its return rattled the pages of an old paper lying by the pan of tacks.

Fluffy winked at Jake, then at the rattling paper, which suddenly seemed to be hiding a luscious mouse. Could it be? Fluffy hardly knew, but mice were scarce. Why take a chance of missing a good meal. Again the fan made its tiresome circuit, again the paper fluttered and down pounced the cat.

No mouse was there, but Fluffy, now thoroughly awakened, pawing this way and that, backed into the pan of tacks, already dangerously near the edge of the bench. There was a crash as the pan hit the floor and scattered its cargo in all directions, then an ominous pause, followed by a vocal outburst as Jake told the world precisely and exactly what he thought of cats in general and of a fluffy one in particular.

Valvy and the Red Head heard the disturbance over the noise of the engine they were testing, saw the cat scamper out the front door and came back to see what had happened.

"Just because this is a rush job for one of the mine officials," howled Jake, "everything seems to go wrong, and then that blasted cat has to go and spill the tacks all over creation."

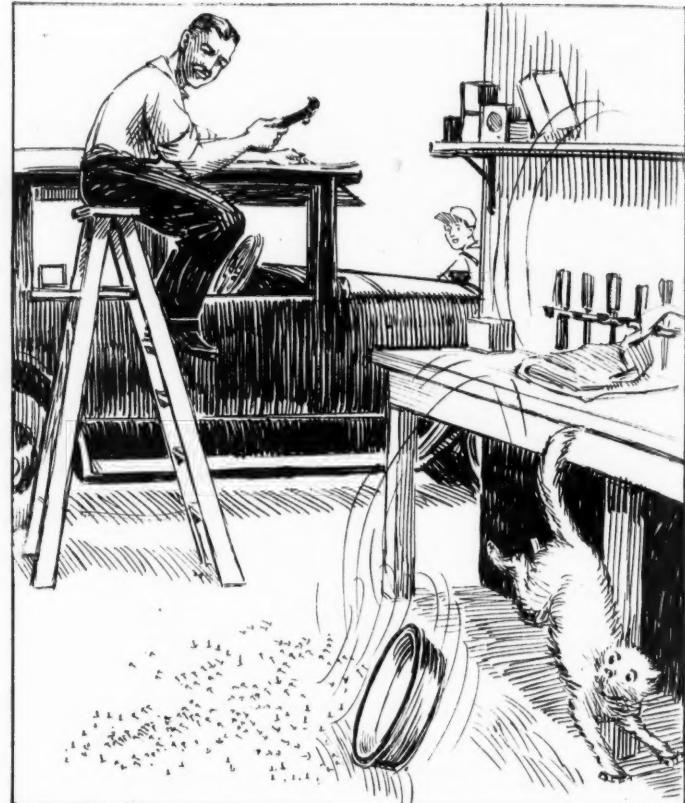
"I'll pick 'em up with a magnetometer," said Valvy.

And he proceeded to put into practice what little he knew of boy scout ethics, endeavoring to help Jake along on his rush job.

The permanent U-shaped magnet picked up the tacks all right, but the fun began when Valvy tried to get them off again and drop them in the pan.

"Let's try another scheme," said Red. "Perhaps the magnetizer will work better, for we can hook it up with a couple of wires, turn on the current when we want to collect the tacks and open the circuit again when we want to drop the tacks in the pan." This method worked somewhat better.

"I'd like to get the low-down on that



As the pan of tacks crashed to the floor, Fluffy decided that discretion was the better part of valor

trick," said Jake. "I know how the magnetizer works, but I don't know what's inside of it. Perhaps you can show me when I finish this job?"

"Fair enough," said Red. "By the time you finish there we will be through with the engine we are working on."

So after lunch they sat at Jake's desk and Red explained the fundamental principles which govern the magnetizer, the field windings of the generator and starter, the action of the generator or cutout, as well as a number of other devices used at times on motor cars.

"Wherever an electrical current flows," said Red, "there is a magnetic effect produced and in the magnetizer this effect is exaggerated by using coils containing many turns of wire and by using iron cores in which more magnetism is produced than would be possible in air."

"The effect of current in a straight wire can be easily detected with a magnetic compass."

And Red made a sketch (Fig. 1) to show what he was driving at. "If the right end of this wire should be connected to the positive terminal of a battery and the other end to the negative so that current flows from right to left along the wire, then we would find that magnetic lines of force go around the wire. A compass above the wire as shown at the left would then have its north pole pointing in one direction, while under the wire the same compass needle would swing the other way, showing that the lines of magnetic force were going in the reverse direction under the wire."

BILL FIXIT STORIES

No. 6

Previous installments in this series by A. H. Packer were published March 19, April 2, April 16, May 7 and May 21, 1925.

SYNOPSIS: Bill Fixit's electrical trouble shooting men start on a trip in a Speedway car. They stop at various places along the way and at the Welch mines are requested by Sandy, the foreman, to help out in fixing up a gasoline pumping engine, some strikers having wrecked the steam pumps. While there, the money they had is stolen from the car, so they are forced to seek employment in Coal City with Jake Penders, the local electrician.

While they are at Jake's place a customer buys a tire, paying for it with a bill that Red afterwards recognizes as one stolen from them. Red goes after a job that Jake had previously fallen down on, fixes it and then explains the tests he made.

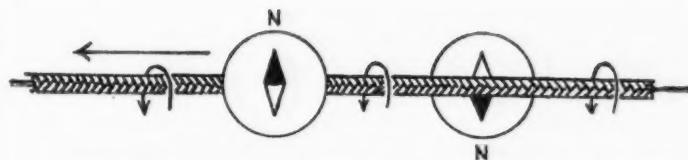
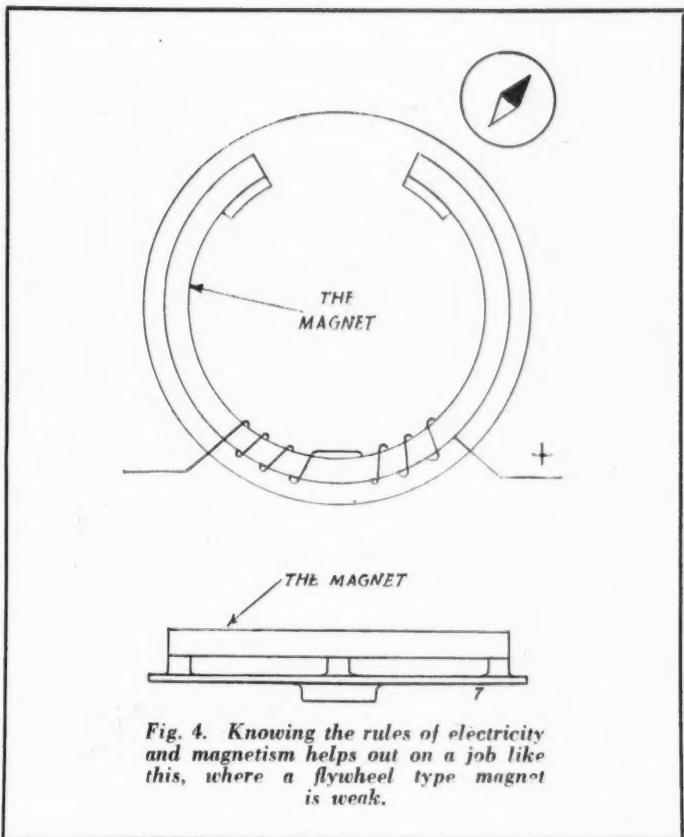


Fig. 1. The magnetic effect of current in a straight wire may be checked with a compass



Fig. 2. The right hand rule for finding direction of magnetism. With the thumb pointing in the direction of the current the fingers point around the wire in the direction taken by the magnetic field

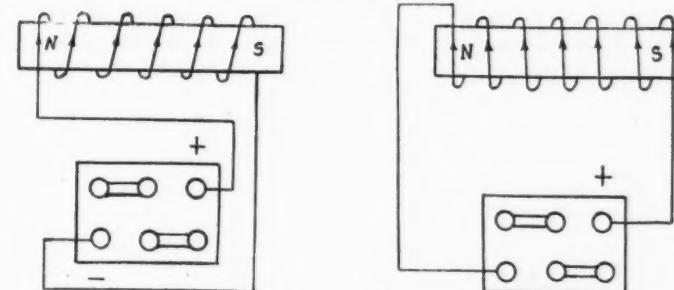


Fig. 3. A coil of wire has a greater magnetic effect than a straight wire especially when an iron core is used. The right hand rule may also be used here, the fingers this time pointing in the direction of the current and the thumb in the direction of the magnetism in the bar

"A simple way to remember the direction of magnetism as compared to the way the current flows is shown in this other sketch (Fig. 2), where you use your right hand to grasp the wire through which the current flows. If the thumb is allowed to point along the wire in the direction of the current, then the fingers will be found to go around the wire in the direction of the magnetism."

"When a strong magnetic effect is needed, it is customary to wind up a coil which gives us a number of wires side by side, and these all act together, sending magnetism through the center of the coil. Then if we want still stronger magnetism we use iron in the coil, because it carries magnetism about a thousand times easier than air, although this varies somewhat with the grade of iron or steel used and with the current and the number of turns in the coil of wire."

"In this other sketch (Fig. 3) we have coils wound around pieces of iron and we can again use the right hand rule, this time with the fingers pointing around the iron bar in the direction in which the current flows, the thumb is now telling us which way the magnetism is going. The sketch at the left end and the one at the right (Fig. 3) appear to be wound differently, because the coil in one case starts at the left and in the other at the right. Tracing the direction of current, however, we find it goes around the same way, so that the magnetism will be in the same direction."

"With the fingers of the right hand going the way the arrows point we will find the thumb pointing to the left, showing that the north pole in each case is at the left end. Reversing either the direction of wind-

ing or the current, however, would change this and make the north pole at the right end of the piece of iron."

"That looks like something to play with," said Jake, "but not much use knowin' about as far as shop work is concerned."

"But that's just where you're wrong," said Red. "You do not need theory like this every day, of course. I had a case once, however, where it was a life-saver to know the effect of current in a wire and to know how to use a coil to magnetize with."

"Where soft iron is used in a coil carrying a current, the magnetic effect is noticed only while the current is flowing. That is why we made use of the magnetizer to pick up the tacks. When steel is used, however, the magnetic condition remains even after the current is shut off."

"The case I refer to was that of the magneto in an outboard motor, where a circular magnet was weak and it was fastened on by rivets in such a way that it would have been a mean job to take it off."

"The first thing we did was to test the ends with a compass (Fig. 4) to see which end was the north pole, and we found it was the one at the right in my sketch. Then we got some old wire from the field coil of a generator and wound a lot of it around the center of the magnet. We then connected it to a battery, using

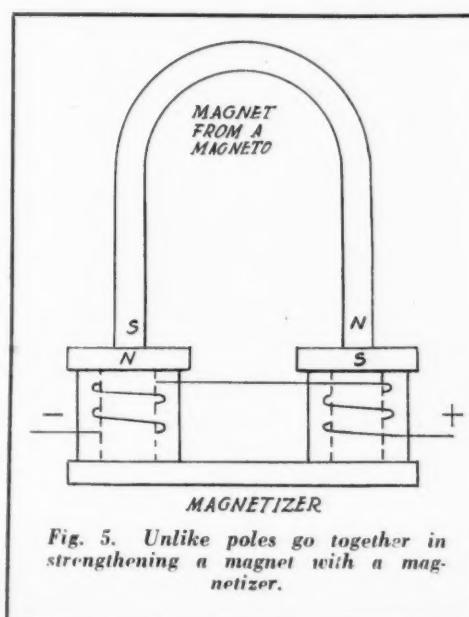


Fig. 5. Unlike poles go together in strengthening a magnet with a magnetizer.

the right hand rule I told you about to make sure we would make the magnet stronger instead of weaker. When the job was finished, you never saw an engine that would start easier or run sweeter.

"As I said before it isn't an every-day job, but when you do need it, it's a wonderful tool that you cannot buy from any salesman. For example, it helps even when magnetizing with a regular magnetizer, for understanding the reasons you are more likely to do the work right. That case of a reversed magnet at the Welch mines, which might have caused serious trouble, would have been avoided if you had understood as much about magnetism then as you will when I get through with you."

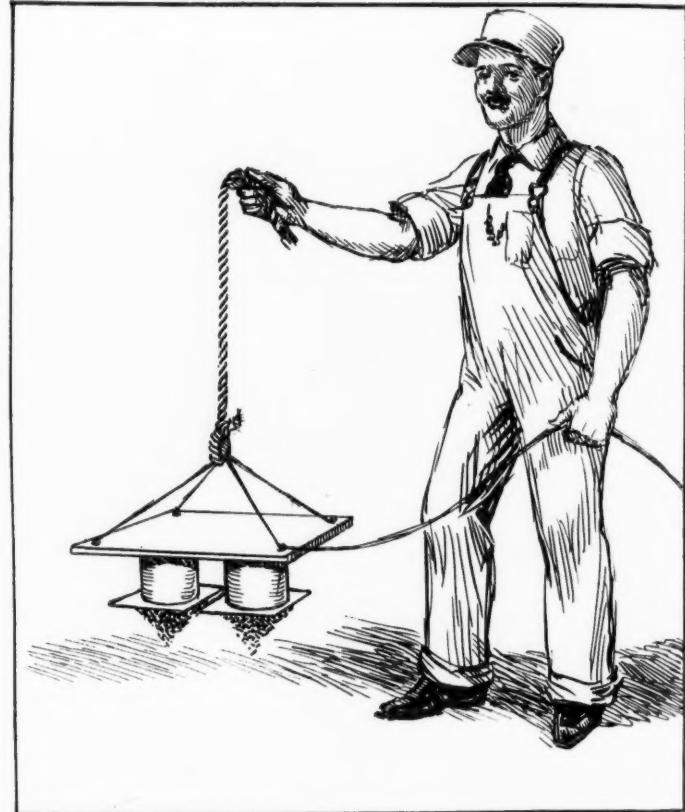
Jake laughed. "Don't rub it in," he said. "Just go ahead with your line and I will absorb all I can."

"I'm nearly through," said Red. "There's just one more little thing I want to show you, and that is the way the electro magnet, when made into a magnetizer, is used. In this other sketch (Fig. 5) we have the magnetizer and the magnet, the north pole of one being placed against the south pole of the other. This is done because the magnetism is thought of as going out from the north and entering the south pole, and the magnetizing action of the magnetizer will, therefore, make the magnet stronger.

A Magnetizing Trick

"One trick in magnetizing is to get the magnet on the right way and as unlike poles attract each other, the best way is to turn on the current, then suspend the magnet over the charger so that it is free to turn and let it turn the way it wants to. That will be the right way to put it on. If you forget to turn on the current first, however, the magnetism is very slight and the magnet may be attracted either way. Then if it is wrong you knock the magnetism out instead of strengthening it, although you magnetize the magnet to some extent in the wrong direction.

"Another trick is to have the magneto setting on the bench parallel with the magnetizer and transfer the magnets across to it without turning them around. Then you



The magnetizer, electrically energized, picked up more tacks and released them easier than the permanent magnet

are sure to get them all on with the north poles all on the same side.

"A third trick which is also quite essential is to let the magnet snap down onto the magnetizer several times and draw it off, with the ends coming off last, and the last time you do this place a bar of iron across the ends to act as a keeper, and leave this keeper on until the magnet is in place on the magneto. In this way the maximum possible strength is retained.

Steam Cooling for Automobile Engines

(Continued from page 15)

of the engine jacket at a point near the outlet.

When no steam is being formed the water simply short circuits, overflows through the outlet fitting and returns to the bottom tank of the radiator. When steam is being formed, the water evaporated is replaced immediately by the pump, any excess passing out with the steam to the bottom tank. Here the steam and water separate, the water falling into the tank and the steam rising into the radiator core where it is condensed by the cooling action of the air.

In water cooled automobile engines operating in fairly hard pulling during warm weather, water enters the engine jacket at about 150 deg. Fahr. and leaves at about 190 deg. Fahr., so that each pound circulated absorbs 40 thermal units. With steam cooling, on the other hand, water enters the jacket at about 212 deg. Fahr. and

leaves as steam at about the same temperature. Now the conversion of each pound of water into steam requires nearly 1,000 thermal units, so that the quantity of heat absorbed is about 25 times as great per pound as with water.

It is evident at once that if the steam generated in a system of this kind is condensed as rapidly as it is generated, the pressure will not rise above atmosphere. In practice with a properly proportioned radiator, it practically never does so. Once the air has been expelled from the system, thereafter the system operates most of the time at a pressure below atmosphere, because cooling capacity exceeds normal demand and steam condensed in the radiator leaves a partial vacuum. A small vent valve usually is fitted at the top of the radiator to permit escape of air and prevent its return, but under all except full

load conditions over considerable periods, the radiator cap can be removed and practically no steam will show at the outlet so long as the engine and fan are running.

Aside from having a bottom inlet, the radiator is about the same as a conventional water type.

When a steam heated crankcase and a steam heater in the body of the car are desired connections are made as shown in Fig. 2, and a small pressure valve is fitted at the normal jacket outlet. This valve is designed to open at a pressure of about 2 lbs.

In the installation shown a double-walled crankcase pan is employed and is designed to receive hot water from the pump. This water circulates between the two walls and then enters the cylinder jacket. A coil of pipe inside the oil pan can be substituted for the double-wall arrangement if desired.

New Elcar Six and Four Models

THREE new models in the four-cylinder line and three new models in the six-cylinder line are announced by the Elcar Motor Co., of Elkhart, Ind. The eight-cylinder models now in current production were announced early in the year. The new four-cylinder line is known as Model 4-55, replacing Model 4-41, and the six-cylinder line as Model 6-65, replacing Model 6-51. Several changes have been made in both models.

Following are the body types and prices:

Model 4-55

5-Passenger touring	\$1,095
5-Passenger coach	1,195
5-Passenger sedan	1,395

Model 6-65

5-Passenger touring	\$1,295
5-Passenger coach	1,395
5-Passenger sedan	1,595

Lycoming Engines

Both models are powered with Lycoming engines. That is the four-cylinder car has $3\frac{3}{8}$ in. bore and 5 in. stroke, cylinders cast in block, L head and 5-bearing crankshaft. The six-cylinder engine has $3\frac{1}{8}$ in. bore and $4\frac{1}{2}$ in. stroke, L head, Swan manifold, and crankshaft with four main bearings.

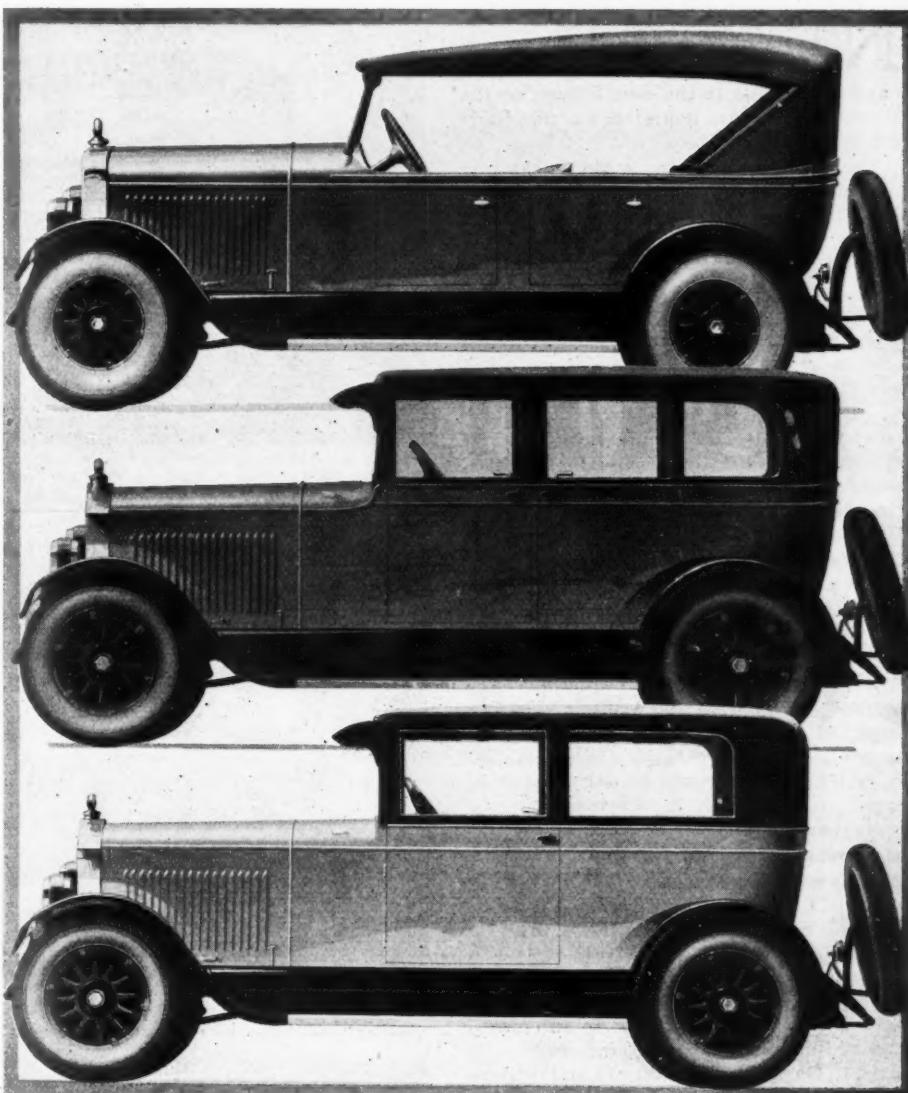
Other specifications of the four-cylinder model include:

Zenith carburetor, thermo-syphon cooling, force-feed lubrication and gear-type oil pump, Auto-Lite starting, lighting and ignition system; Borg and Beck single dry plate clutch, Warner transmission, wood wheels and 5.25 in. balloon tires, external contracting brakes on rear wheels and emergency brake on front universal. Front wheel brakes may be had for \$40 extra. Semi-elliptic springs are used front and rear, those in front being 2 in. wide by 34 in. long and those in the rear $2\frac{1}{4}$ in. wide by 51 in. long. The drive is Hotchkiss.

Ross cam and lever steering gear is used. Bodies are made in the Elcar factory. They are finished in Murco lacquer and the standard colors are dark blue, Thebes gray and Buckingham gray, with chassis in black and wheels natural wood.

Standard equipment includes drum type head lamps, combination tail and stop light, gasoline gage on instrument board, electric horn, speedometer, ammeter, automatic windshield wiper, extra rim and carrier; in coach and sedan, rear view mirror, and in the sedan, a heater.

Mechanical units are practically the same in the six-cylinder model, except the carburetor is a Stromberg. Spring dimensions are the same. Four-wheel mechanical brakes are standard equipment. Both the six and the four have one-piece adjustable windshield. The fuel tank in both models holds 17 gallons.



New Elcar models. From top to bottom: 4-cylinder, 5-passenger touring; six-cylinder, 5-passenger sedan; six-cylinder, 5-passenger coach

Ochrome Alloy Valves

Poppet valves for internal combustion engines made from a non-ferrous alloy are manufactured by the Ochrome Valve Co., Shelton, Conn. The material used for these valves is a cupro-nickel-chromium alloy which not only has very good physical properties at normal temperatures but is highly resistant to the effects of high temperatures.

The forgings for these valves are made by the Curtiss Bay Copper & Iron Works, a subsidiary of the U. S. Industrial Alcohol Co., and the Ochrome Valve Co. finishes the forgings and markets the product. These valves, of course, are particularly suited for use in engines of the high duty type in which the conditions of valve operation are particularly severe. The valves are intermediary in price between alloy steel valves and nickel chromium valves.

At present the Ochrome Valve Co. is furnishing these valves to three manu-

facturers of marine engines, who use them as standard equipment. The valves are being made both for original equipment and for replacement purposes. One of the advantages of the valves is that, since they have no iron in them, they will not rust and are therefore not subject to deterioration in case the engine is laid up for a long period, as commonly happens with marine engines, tractor engines, and the like. The alloy from which these valves are made, known under the trade name of Everbrite, consists of substantially 65 per cent copper, 30 per cent nickel and 5 per cent chromium.

SPECIAL RADIATOR SHELLS FOR FORDS

Ford owners who desire to "dress up" their cars with nickel-plated radiator shells and head lamp doors may now secure these accessories from Ford dealers. This equipment is being supplied by the Ford Motor Company to authorized dealers throughout the country.

Hupp Club Four Sedan Improved

NEW body lines, more interior room and a number of improvements to provide greater riding comfort have been made in the new edition of the Hupp club sedan mounted on the four-cylinder chassis.

The price remains the same as the former model introduced in 1924 listing at \$1,375. Increased comfort has been attained by lengthening the rear and front compartments, the former being 3 in. larger and the latter 1 in. larger. The additional 4 in. in the length of the body gives the car a considerable enhanced and large appearance. Easier entrance has been obtained by increasing the width of all three doors by 2 in. while a new style of upholstery and a later model of vision ventilating windshield fitted with an automatic wiper are features of the new model. Duco finish in either Hupmobile blue or beige is optional.

A wide seat, heavily upholstered, being 13½ in. thick and 19 in. deep and upholstered in velour is one of the features of the body. Distances between driver's seat and pedals, steering wheel and all controls have been carefully planned and studied to provide for riding comfort. Back of the seat and extending clear across the car's interior is a compartment in which sample cases, traveling bags or large packages may be carried. Another large compartment is at the rear which is provided with lock and key.

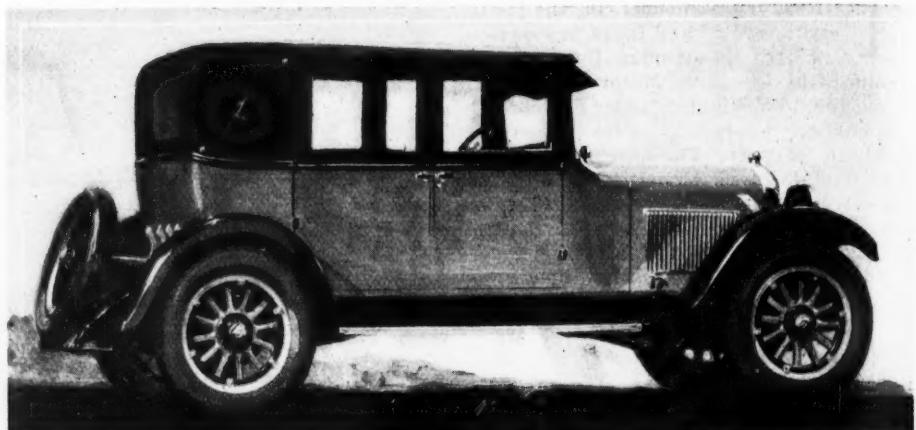
New Gardner Six Sport Sedan

PRODUCTION of the new Gardner Six Sport Sedan is now in full swing and shipments are going forward regularly to Gardner distributors and dealers. The lines are set off by a two-tone Duco finish and further emphasized by full-size balloon tires, large nickel-trimmed lamps with non-glare lenses, cowl lamps and other comfort and convenience features.

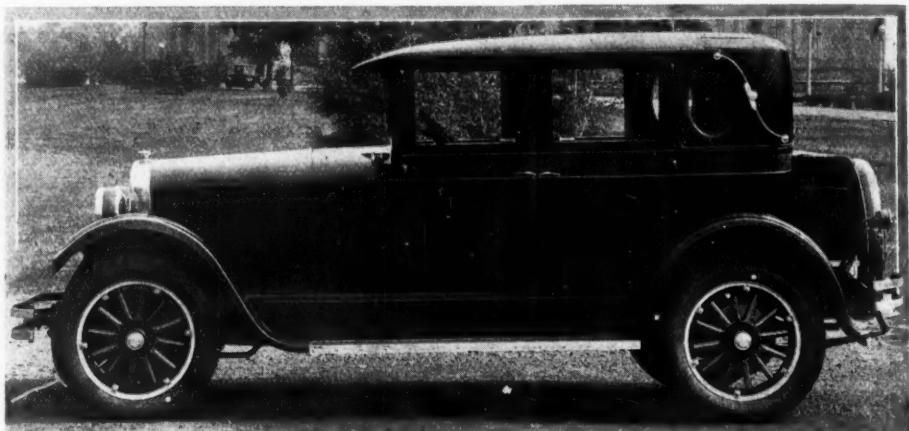
An added touch of smartness results from the use of black leather used in connection with coach irons for the rear upper portion of the body. The interior is upholstered and trimmed in genuine mohair, windows are equipped with satin curtains, and all instruments are grouped under a single glass panel on the instrument board, and indirectly lighted. Standard equipment includes enclosed 4-wheel brakes, transmission lock, Snubbers front and rear, balloon tires, automatic windshield wiper and stop light, dome light, rear-vision mirror, gasoline gage and heat indicator on dash, and other refinements.

CORRECTION

In the June 11 issue of MOTOR AGE, page 21, in publishing the pictures of officers of the National Battery Manufacturers' Association who were present at the recent meeting of the association at the Congress Hotel, Chicago, the title of



Hupp four-cylinder club sedan in which the body lines have been changed and greater riding comfort secured



New Gardner Six Sport Sedan now in production

P. M. Marco (picture No. 4) should have read "treasurer." Picture No. 5 is that of J. B. Perlman, who is a director and member of the advertising committee of the association. Through error, Mr. Perlman's name was omitted from the lines under the pictures printed in the June 11 issue.

NEW METERS FOR RADIO SETS

A new bulletin, known as No. 400, is announced by the Roller-Smith Co., giving complete description of a line of meters for radio sets, battery eliminators, battery chargers and similar usages. These meters are made in a variety of ranges, both as ammeter, voltmeters and milli-voltmeters. This bulletin may be obtained from the Roller-Smith Co., 233 Broadway, New York.

A FRENCH DIRECTORY

The French Syndical Chamber of Manufacturers of Accessories for Motor Cars, Cycles and Aircraft, has just published a year book in English which contains a great amount of useful information for manufacturers and dealers.

This volume gives the addresses of all the French manufacturers of accessories

and spare parts, with details of their specialties. Further, the formalities and the time required for the despatch of goods from France to English speaking countries, etc., are indicated.

This year book is useful to those who wish to do business in France. The price is 12 French francs from the publisher, the Syndical Chamber, 18 Rue de Tilsitt, Paris.

BUS OPERATORS ORGANIZE

ST. LOUIS, MO., June 15.—A Motorbus Operators' Association of Missouri has been formed to co-operate with law making and law enforcing bodies in St. Louis and in the district covered by the bus lines, with a view to promoting the passage of legislation governing the operation of interurban motor buses.

Robert E. Lee, manager of the St. Louis Automobile Dealers' Association, presided at the meeting, at which the organization was formed.

J. L. Calvin, president of the Washington Bus Co., was elected president; Fred Lowe of the Creve Coeur Drayage Co., vice president; John Barrett of the County Motorbus Co., secretary and treasurer.

New Reo 2-Ton Speed Wagon Makes Possible Fast Road Schedules

DESIGNED for specialized service in carrying loads approximating two tons, the new Reo heavy duty speed wagon listing at \$1,985 has been introduced and now supplements the model "F" four-cylinder chassis in the 1½ ton field. To be able to maintain fast schedules and provide for smooth operation over long distances, a six-cylinder, 50 b.h.p. engine, 13-plate dry disc clutch, three-speed transmission, a 5.7 reduction spiral bevel rear axle and large pneumatic tires are provided.

To make available the factors of economy and speed for the hauling of loads which by reason of bulk or weight are not suited to the qualifications of the smaller sizes of rapid delivery trucks, every unit of the new model has been specially developed. From the viewpoint of service and maintenance, numerous parts have been made interchangeable with the passenger car and smaller speed wagon chassis. A feature of the design permits the vehicle to maintain the same constant speed whether loaded or returning empty without causing undue shocks and jars to the chassis parts.

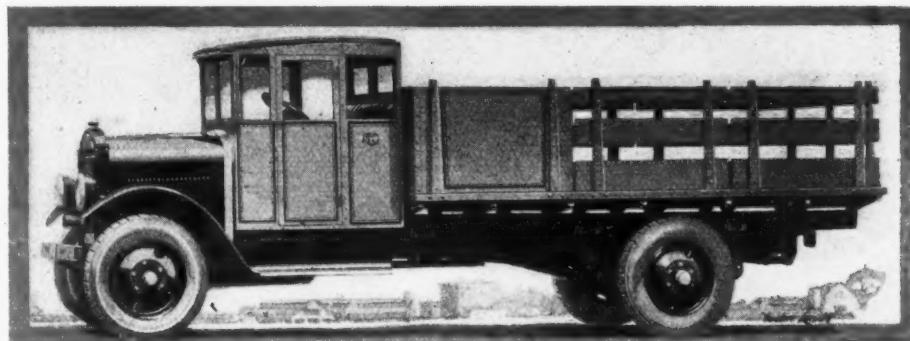
Exceptional Ruggedness in Engine

Exceptional ruggedness has been built into the six-cylinder 3-5/16 in. by 5 in. bore and stroke engine which is rated at 50 h.p. at 2,000 r.p.m. and has a compression ratio of 4.34 to 1.

Mounted in a flexible four-point sub-frame, the engine which forms a compact unit has been designed so as to provide for ease of maintenance and service. Formed in block, the cylinders are cast integral with the upper half of the crankcase, the lower section being of aluminum.

Intake valves in head and exhaust at side which have featured all Reo engines during the past 15 years are employed, the material of the inlet valve being cast iron and the exhaust chrome nickel steel. From the four bearings dynamically balanced crankshaft, the drop forged cam-shaft is operated by helical drive, non-metallic gears being employed on the crankshaft and idler. Aluminum alloy pistons, 4 in. in length and carrying three rings are attached to the carbon steel connecting rods of 10½ in. center to center length, the complete reciprocating assembly weighing 4.65 pounds.

Oil is forced by a piston type pump to the main bearings, while splash is employed to lubricate the rods and cylinders. Water is circulated through the cooling system which holds 4¾ gallons by a centrifugal pump. The radiator core which is made of extra heavy gauge stock to guard against damage from freezing, is of the fin and tube type, while the shell is made from pressed steel. Gasoline is delivered to the Schebler 1¼ in. carburetor from a 17-gallon fuel tank lo-



Reo 2-ton speed wagon which supplements the model F four-cylinder and which is powered with a six-cylinder engine. The price is \$1,985

cated under the seat by the Stewart vacuum system. With the battery ignition distributor mounted on the North-East make of generator, a 6-8 volt Willard battery of 111 amp. hrs. capacity is employed. The starter which is of the same make as the generator, is engaged by means of chain drive. A governor built right into the inlet manifold is provided as standard equipment.

A multiple dry disc clutch having seven driving and six driven members, is connected through one fabric and one metal type of universal joints to the three-speed transmission which is supported on separate unit by a sub-frame.

One conceded benefit of mounting the main units in sub-frames is that the line of power transmission can be brought more level and the minimizing of the shocks and twists which would be otherwise imparted to these units through the weaving of the chassis.

Drive to the rear axle is through a two-piece propeller shaft and three metal universal joints. Spiral bevel is employed in the final drive of the semi-floating rear axle in which the torque is taken through a torque arm bolted through the differential supports and extending to the center cross member of the frame. Propulsion is taken through the springs which are underslung in respect to the axle.

Both brakes act directly on the hardened and ground rear wheel drums, the service brake being of the external type and the emergency internal. Special attention has been paid to the construction of the front axle which is of "I" section drop forged from a single piece of heat treated carbon steel. A special steering gear of the bevel pinion and sector type employing heavier gears and shaft than is customary in usual practice, is bolted to both inner and outer side frame members.

Formed of ¼ inch stock, 5½ inches deep, the pressed steel frame has the side members running parallel from the rear end to the back of the transmission frame support. From this point to the radiator

the frame is tapered to make for easier turning and provide a small turning radii. Eight cross members insure the rigidity of the frame while front end is protected by a channel bumper built integral with the frame. The spare wheel and tire is carried between the channels of the main frame at the rear of the chassis where it is accessible, yet out of sight when the body is mounted. Chassis lubrication is by the Zerk system employing two pressure guns, one for oil and the other for grease. Providing a clearance of 10¾ inches under the front axle and 7¾ under the rear axle, 32 in. x 6 in. and 34 in. x 7 in. tires are provided. Pneumatic cords mounted on Budd steel disc wheels are standard equipment. The total weight of the chassis is 3,900 pounds, and the wheelbase 156 inches.

Special Stake Body

A special stake body and cab have been developed for this chassis the complete price being \$325.00, the body listing at \$175.00 and the cab at \$150.00.

Cab, seat, and windshield are all constructed as a single unit over a pair of short sills. The frame is of hardwood covered with metal panels, while the roof is built up of closely joined slats covered with a durable waterproof material. Every practical provision has been made for the driver's convenience and comfort. The windshield is in two panels, and each one may be swung outwards at the base and secured in any desired position by a thumb set-screw. Two stationary windows on either side of the cab are provided while the doors which may be swung wide open and latched are equipped with adjustable windows. The instrument board equipment comprises a speedometer, ammeter, dash light, trouble light, switches and fuse box. Upholstered in leather, fabric over coiled springs, the seat is made in two sections to provide for comfort and to make easy inspection of the battery which is located under the front cushion. The gasoline gauge is always visible and located between the two seat sections.

MOTOR AGE'S PICTURE PAGES

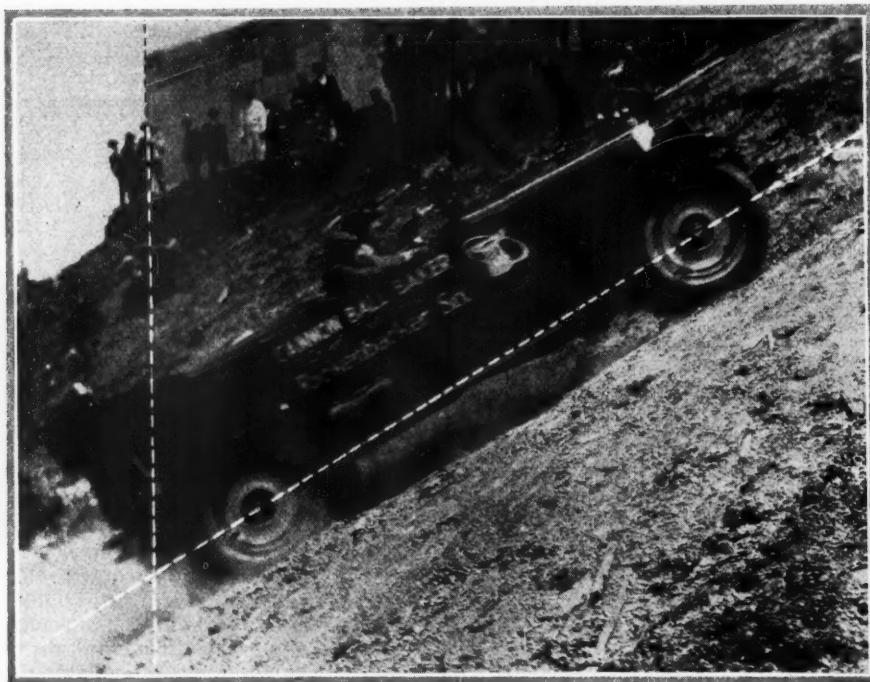
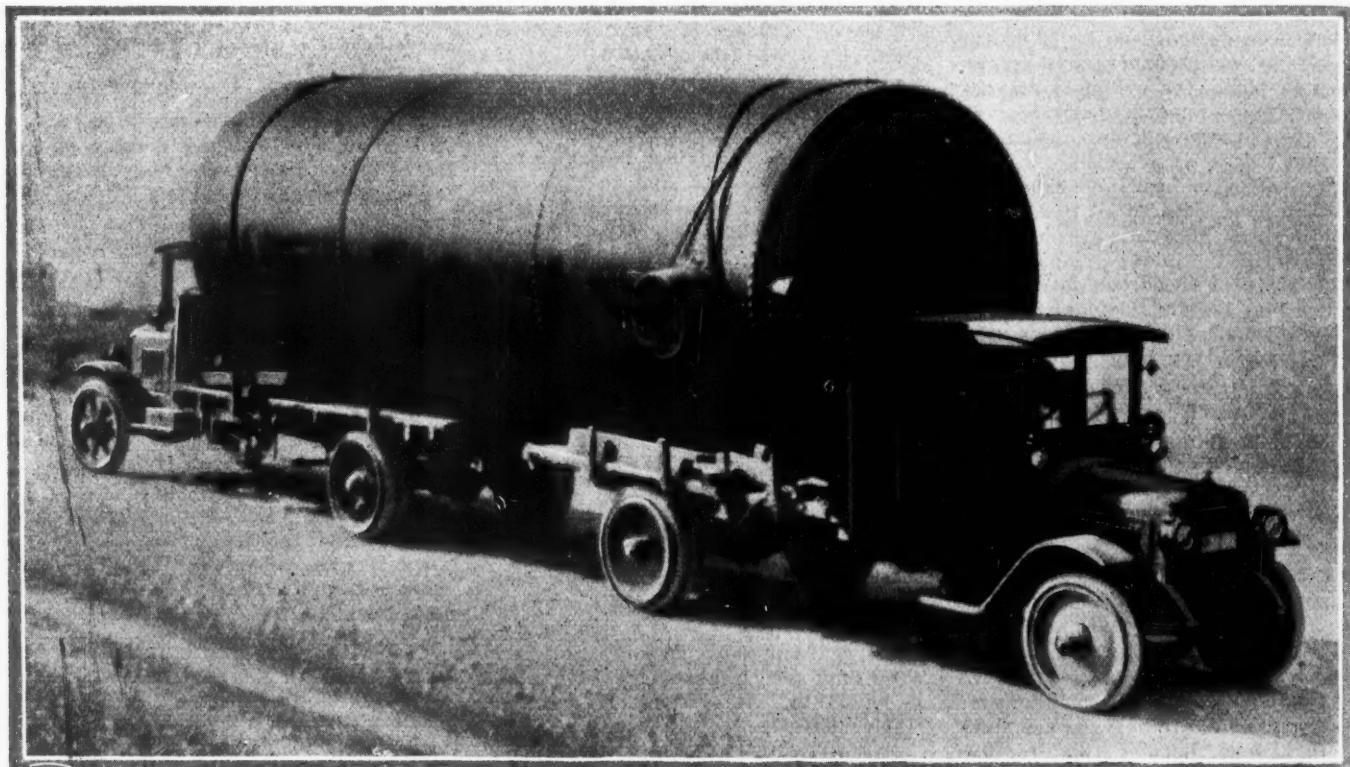


FIGURE IT OUT FOR YOURSELVES. Announcement is made from the Rickenbacker factory that "Cannon Ball" Baker recently climbed the Victory Memorial Mound at Kansas City in one of their Sixes, a 30-degree grade and a 50 per cent incline. The line of the wall shown has been projected and bisected by a line through the hub caps. You can check the incline by a simple machinist's or engineer's protractor.

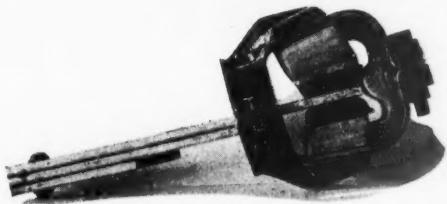
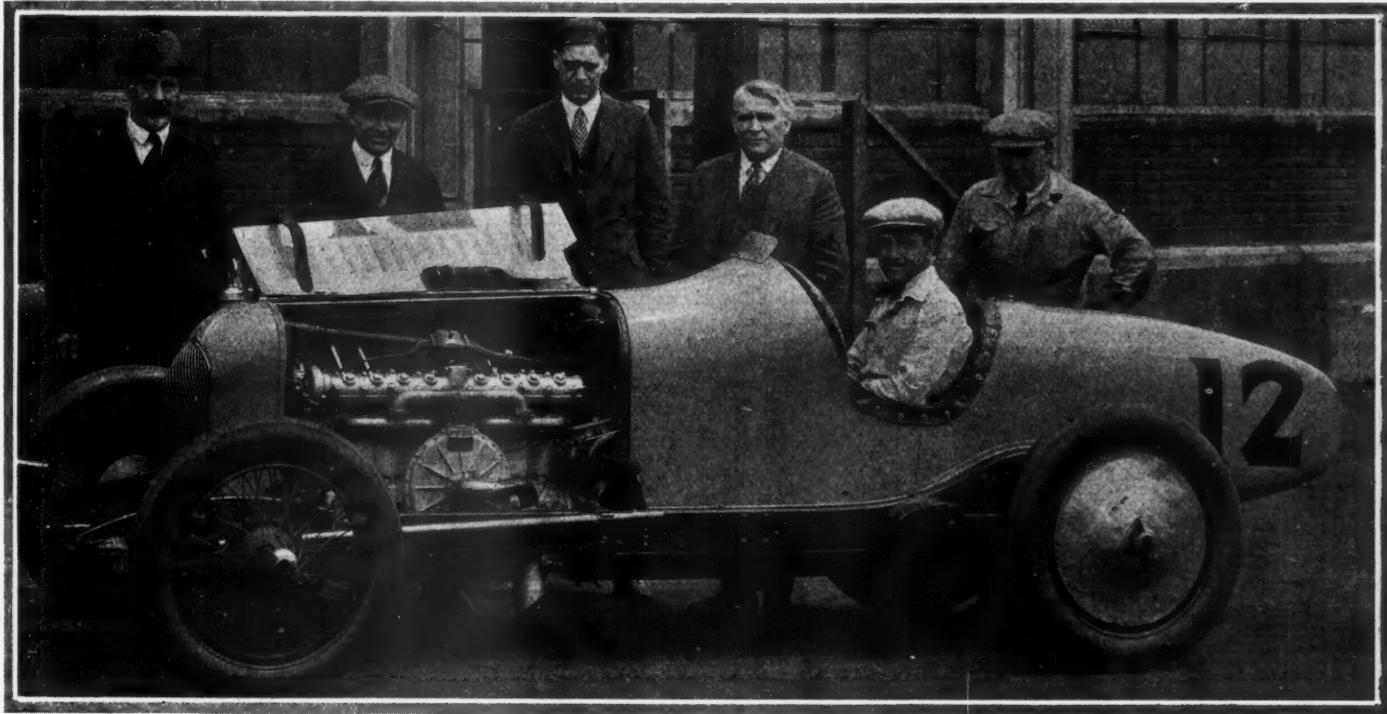


CALLS ON PRESIDENT. John N. Willys, well-known automobile manufacturer, had luncheon with President and Mrs. Coolidge recently. He is shown here in front of a Willys-Knight car with his daughter Virginia.



AN UNUSUAL STUNT. Two Republic trucks were chained together, one running in reverse, hauling a huge oil storage tank, 27 ft., 6 in. long, and 10 ft. in diameter, weighing 12 tons, to the U.S. Veterans' Hospital at Livermore, Calif. Three additional tanks were handled by this same method. These tanks were hauled five miles, up hill and down.

OF AUTOMOTIVE INTEREST



AN AUTOMOTIVE MERCURY. Peter De Paolo is shown in the top picture at the wheel of the Duesenberg Special which won the 1925 Indianapolis race. Others in the picture are, from left to right: Dr. S. A. Moss, General Electric Co.; August Duesenberg; R. W. Mercer, General Electric Co.; Fred S. Duesenberg, and James Kemp, chief mechanician. Below: A race car must be comfortable as well as fast in long distance races. De Paolo's car was fitted with the rubber shock insulators illustrated.



TRACTOR AS TELEPHONE AID. Hole boring devices and telephone pole setting apparatus have been put on McCormick-Deering industrial tractors by the American Telephone & Telegraph Co., and are in service in the vicinity of San Francisco. It is said that a hole from 18 to 30 in. in diameter can be bored in an average time of three to ten minutes, and that a Class A 45-ft. pole can be set in an average of 10 minutes. The pictures show a pole being set and a close-up of the mechanism used.

The READERS' CLEARINGHOUSE

Questions & Answers on Dealers' Problems

Carbureter Not Suitable for Car

Q.—We have installed a model M1 Stromberg carbureter on a 1916 Saxon six and would like to have information as to the correct way to adjust it. It works fine under all conditions except one. When driving along a level road when there is not much pull on the engine the operation is irregular and the engine does not run smoothly but when accelerating, driving at high speed or idling the operation is all right. The engine has been completely overhauled but we cannot seem to adjust the carburetor properly.—Ross H. Bell, Buckingham, Iowa.

According to information we have available the original carburetor installa-

and accordingly makes the mixture lean. It will therefore be seen that the effect of A and B are just opposite for A makes the mixture lean when turned to the right, while B makes the mixture for idling rich when turned to the right. For best results on this car it may be necessary to go to the original carburetor equipment or its equivalent with horizontal outlet.

CHANGING TRANSMISSION IN A TRAFFIC TRUCK

Q.—Will you please tell me if we can replace the Covert Model MU-T transmission on a 1920 two-ton Traffic truck No. 54186 with a four-speed Muncie unit power type transmission with a 17½-inch bell housing. The engine is a Continental No. 114525-N type 7-N 3½ by 5 inch. What changes would be necessary? Would it give a lower gear ratio in low speed? We wish to reduce the gear ratio on this truck for pulling the hills which we have to in delivering wood in this town.—Arthur J. Raley, Box No. 244, Klamath Falls, Oregon.

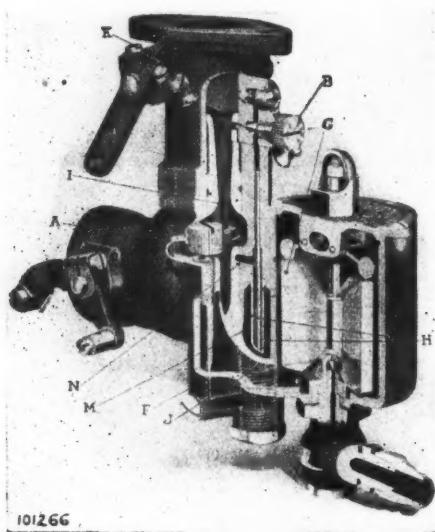
We are sending you under separate cover a blue print giving the ratios on each speed of the Muncie four speed transmission. This blue print has been kindly supplied us by the Muncie Gear Works, Muncie, Indiana. We have been informed by the Chief Engineer of the above company that if the engine with which the truck is now equipped is equipped with a 17½ inch bell housing which is the equivalent of a No. 3 S. A. E. bell housing that the Muncie transmission will fit. If the bell housing on the engine that you have is special as sometimes used on the model N Continental the Muncie transmission in question cannot be successfully applied. We cannot give you details, but believe that you can get all the necessary information by reference to the blue print.

WANTED—A SOLUTION FOR REMOVING TAR

Q.—Can you tell us the name of any preparation which will remove road tar from bodies and fenders of automobiles without damage to the finish. We have tried gasoline as well as kerosene and have found that it is not practicable, as neither gasoline or kerosene will dissolve road tar.—Lucia Brothers, Green Bay, Wis.

We believe that gasoline or kerosene will take the tar off if applied while the tar is fresh. After the tar dries thoroughly it acts very much like paint which has dried and becomes a portion of the finish of the car.

We hope any of our readers who know of a better solvent than gasoline or kerosene will supply you with this information.



Model M-1 Stromberg carbureter installed by reader on a 1916 Saxon Six

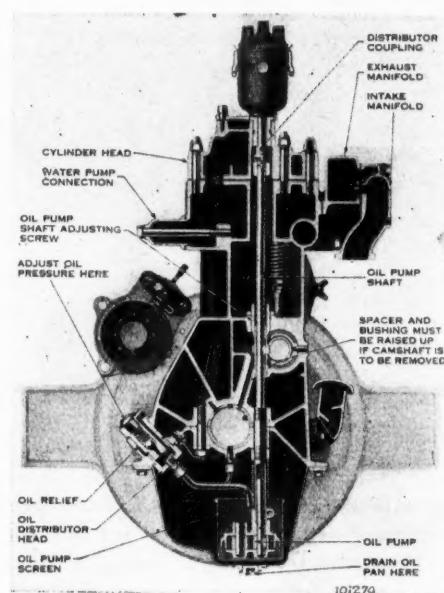
tion calls for a model M Rayfield or a model LB-1 Stromberg. The LB-1 Stromberg had horizontal outlet so we assume that you found it necessary to use a 90 degree elbow of some sort in order to install the model M-1 Stromberg which has a vertical outlet. If this is the case it may be the cause of your trouble rather than improper adjustment. If you could supply additional heat to this elbow, it might remedy the condition you describe. We are showing an illustration of the model M-1 carburetor and you will note that adjustment B controls the mixture when idling. From your description this mixture may be too rich which would necessitate turning B to the left or anti clockwise to permit more air to mix with the gasoline which enters the carburetor at this point.

The other adjustment is marked A and controls the mixture through the whole driving range. Turning nut A to the right or clockwise tends to shut off the gas

Rickenbacker Oiling System

Q.—Can you furnish a cross sectional diagram of the 1924 Rickenbacker 6 motor showing all oil passages with a description of the path that the oil follows in circulating?—New Mexico Mechanic.

A sectional illustration is shown in accordance with your request. Oil in the base of the crankcase is taken through the oil pump screen and then by the gear pump to the main bearings. It then flows through the hollow crankshaft to the connecting rod bearings and surplus oil from



Transverse section of Rickenbacker engine

these bearings lubricates the cylinder walls, push rods and valves. The oil pressure should be about one pound for every mile per hour the car is travelling, although this will vary to a great extent depending on the temperature of the oil and the extent to which it has been diluted. A variation of 25 per cent or 40 per cent is permissible. The oil pressure can be increased as indicated in the illustration by loosening the lock nut and turning the screw down slightly. The condition of the oil pipe, screen, pump and bearings also affects the pressure.

PUT NEW TUBE IN THE VAPORIZER

Q.—Could you recommend some method of removing carbon from the vaporizer tube on Fordson engine. J. W. Morris, Mayetta, Kan.

If you try to burn out the carbon as is done in burning out the carbon in an engine you will find that the vaporizer tube also burns up. Accordingly the best remedy is to install a new vaporizer tube which sells at a fairly reasonable price. This is the most economical way to make a repair of this character.

Planning Your New Building

By TOM WILDER



A Fine New Building But a Dinky Little Showroom

Q.—We are contemplating the erection of a new garage and salesroom on one of the main streets of this city, rough plan of which is enclosed for your inspection.

At present we are planning brick front, tile sides, with brick pillars for the support of steel supports for roof, which will be nearly flat of wooden construction with fireproof covering. Large steel windows on the alley sides, copper frames for the windows in showroom and small stores on side. Planning for cement floor in garage, wooden floor in salesroom for utility and looks.

The ramp will be constructed of wood with wooden supports. Hot air heat in garage, large furnace on concrete floor (no cellar under garage proper).—Ashford Motor Co., 18 West Avenue, Lockport, N. Y.

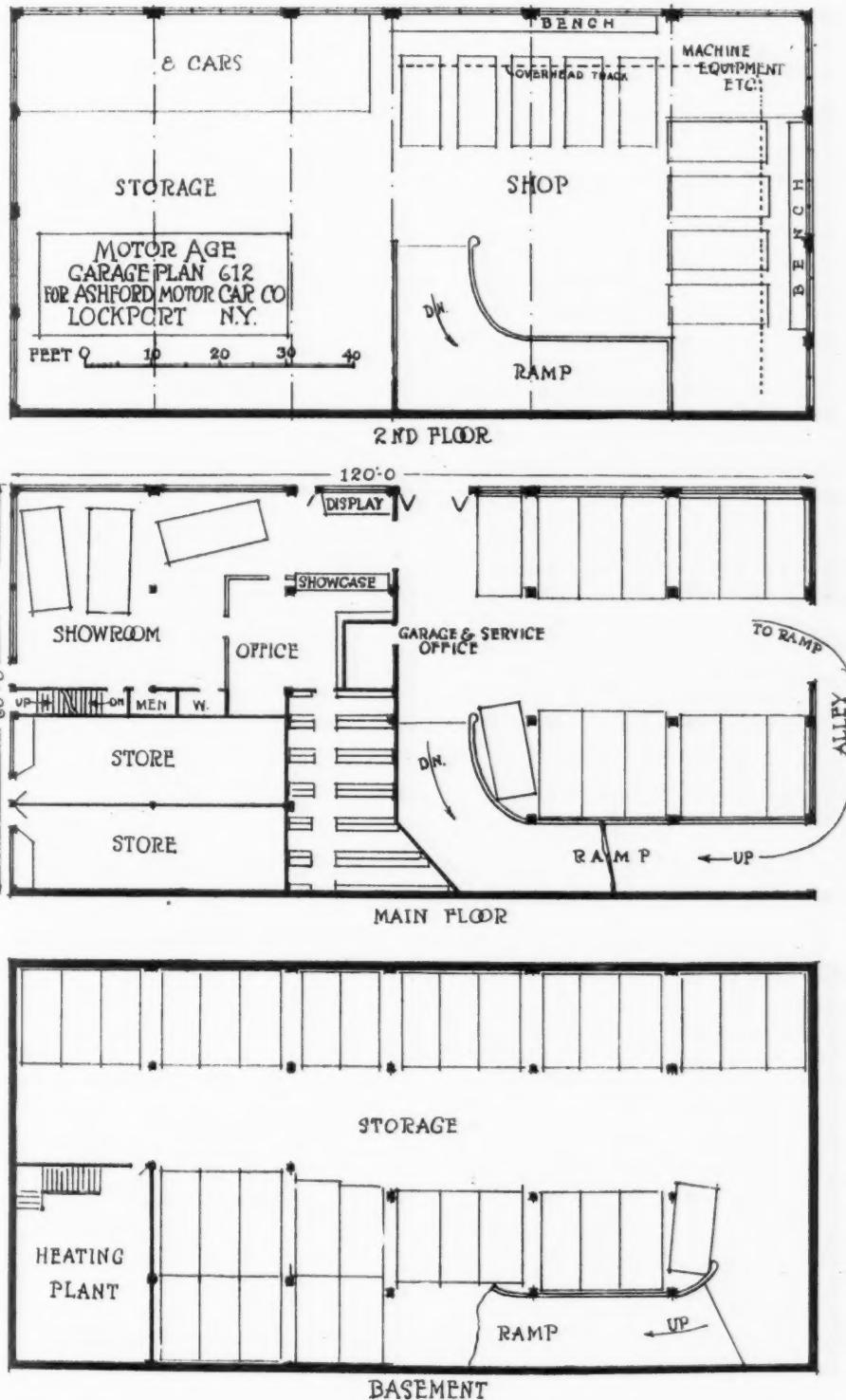
We believe that your showroom is altogether too small to display two makes of cars properly and think the space given to the small stores would be more valuable if devoted to the showing of cars. The showroom is in a way your sign board by which the public gages your business; by making it roomy and well appointed you inspire confidence.

Brick Pillars Bad for Floor Support

There are several details of your construction and operation that we would question. For instance the brick pillars are allright in outside walls, but would be altogether too bulky for the support of floors. The overall dimension of your building would permit the spacing of columns so that all but one space would take care of three cars and just one would take care of two. If brick pillars are used, they would be so large that the number of cars would be cut down. Instead of the brick, we would suggest concrete, steel or steel pipe columns filled with concrete, those latter can be secured ready made and are the smallest type of column consequently giving you the greatest amount of space for cars.

We have shown a space in the basement for the heating plant and would suggest that you install a steam heating system in the beginning. This could be built to give you as much or as little heat as you desire and would be much more economical than the hot air furnace you suggest.

In order to give more car storage on the first floor we have used the alley as an entrance to the ramp going to the second floor. Your letter and your sketches do not exactly agree regarding the basement and consequently we have drawn a full basement the same as the first and second story making the building complete and we think it the best policy to build in this manner. Of course, it will



This is a well arranged plan for a two-story and basement building with ramps. It is quite similar to 610, published in the May 28 issue

cost you more to build a full basement than only a small section, but the cost will not be in proportion to the increase in floor area and you will have a base-

ment that will be worth while.

The front part of the second floor would make a fine showroom for used cars.



Clearing Up Electrical

EDITED BY A. H. PACKER

An Easy Test for Rubbing Armature

Q.—We are having some puzzling trouble with a North East motor generator on a Dodge car. It makes a heavy thumping noise when the motor is running slowly and by putting one hand on the generator it is possible to feel the knock. Raising the top brush or retarding the third brush until the generator does not charge will eliminate the bumping action. The bearings have been checked and found o. k. and the armature has been turned slightly where it seemed to be rubbing on the pole pieces. New generator chain and sprockets have been installed. O. B. Hayes, Guthrie, Okla.

We recommend removing the motor generator and testing it on the bench. We suspect that wear in the bearings or shifting of the end bracket has made it possible for the armature to strike the poles and that it does so only when field current is on. To make a test of this sort remove the field fuse and raise the brushes and connect the field circuit to a 12-volt battery. Turn the armature by hand and while it is turning connect and disconnect the circuit from the field to the battery. The effect of current through the field windings will be to pull the armature to one side if there is any play in the bearings and to make it drag on the pole pieces if this is at all possible.

If the armature turns freely with the field current on, then you can depend on it that the armature does not rub. However, if it does rub you will find that a sudden drag exists and that it is very difficult to turn the armature. The only other reason for the knock being noticed when the generator is developing electrical power would be the mechanical strain put upon the sprockets and chain and while new ones have been installed it is possible that the alignment is not correct or that a sprocket has been put on crooked.

If in the first test you find everything all right, then it would be advisable to check the chain and sprockets again. The bearings should be checked by laying them on a surface plate and moving the center race sideways. If there is any perceptible play the bearings should be replaced. A pitted ball or race would also cause trouble.

Internal Circuits Wanted

Q.—Show wiring diagram of 1923 Westinghouse generator with cutout connected on top.—New Zealand Subscriber.

Diagram of this generator with its internal connection is given in accordance with your request.

PLUGS BURN UP IN TRACTOR

Q.—We have a Fordson tractor that is hard on spark plugs. The owner has used all makes or plugs that he can find but no plug will last in this tractor over 4 or 5 days. They burn out or break down in some way. Otherwise the tractor is in good order and working fine. It is six years old but as good as new except for this trouble.—Gerald F. Hoffman, Princeton, Ill.

You do not describe the method of break down. If the points burn away it is possible that you have the coils too tightly adjusted and the heat of the spark burns the points. If it is the porcelain that gives the trouble you possibly have too lean a mixture or there may be trouble in the air washer or exhaust heating system which causes too lean a mixture and gives an oxidizing flame. We would recommend a plug with a short electrode and with a conical insulator. If the spark is too much retarded this will cause overheating and may affect the plugs.

NORTH EAST GENERATOR AS BATTERY CHARGER GIVES 40 AMPERES

Q.—I notice a number of inquiries in The Reader's Clearing House on fixing up old automobile generators for charging batteries, particularly with reference to the old North East model D. I fixed up one of these as follows: I removed all the series windings and connected the machine as a straight shunt generator putting a small rheostat in the field. It now delivers 15 volts and up to 40 amperes. You can get 40 amperes out of it on a six volt battery. However, I figure that it is not safe to use over 200 watts. You can charge two six volt batteries and one 12 volt nicely without overheating. We have run it 14 hours at a stretch without having it get too hot. We use a one h.p. gas engine to drive it and get 15 hours run on one gallon of kerosene. It is handy when the power goes off.—S. W. Moebius, Frisco, Utah.

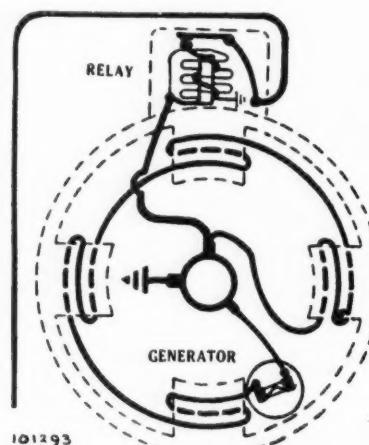


Diagram of Westinghouse generator with external cutout

A Tricky Regulator to Wire Up

Q.—I have a 1919 Maxwell in which I have installed a Dodge battery and in doing so have changed the length of the starter cables to some extent. Would this cause trouble which I have recently experienced with the generator failing to charge the battery. Sidney Topness, Taylors Falls, Minn.

No, a slight change in the length of the starter cable would produce but a slight increase in the resistance in the charging circuit and the amount of the change would be so small as to have no effect.

Q.—Last fall a new type K dash panel was installed and this spring when the car was first run the generator charged for a few minutes and then quit. Now the cutout will not close at speeds under 30 or 40 miles per hour. Weakening the cutout springs it will close at 18 miles per hour, but no current goes to the battery. Can you suggest a remedy?

In installing the new regulator panel you either obtained the wrong kind which is designed for the 6-volt system used on previous models or else you wired it incorrectly. We are sending you by separate letter a sketch which shows a method of connecting a two gang lighting switch and a 12-volt cutout in place of the regular combination regulator and cutout. On the back of the lighting switch we recommend using either German silver or iron wire resistance or you might be able to use the regular resistance unit that is mounted at the top of the fuse panel. We do not have space to print all of the wiring diagrams and sketches that we have available, but will gladly send a sketch of this method to anyone who wishes to install a simple regulating scheme on one of these 1918 or 1919 Maxwell cars.

WHY CLOSED CIRCUIT IGNITION IS USED

Q.—With reference to the open and closed circuit types of ignition as used on automobiles we note that practically all cars, regardless of price, use the closed circuit type. It seems to us that the open circuit type is the more desirable from an operating stand point and the only points we can see in the closed circuit type is that it is cheaper to manufacture. We are reluctant to believe that reputable manufacturers would economize on their products to this extent, hence our request for information. Florida Dealer.

The closed circuit type of ignition is used because it is more reliable and we do not believe that the cost enters into the consideration at all. The open circuit type ignition came into use when dry cells were used as a source of battery current because the open circuit type ignition was more economical. The amount of battery current saved however, is so microscopic that with a generator capable of keeping the storage battery charged it is not worth considering. Accordingly the consideration of reliability and longer life leads all manufacturers to use the closed circuit type ignition.

Trouble With Bill Fixit

EDITED BY A. H. PACKER

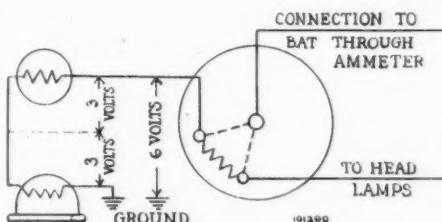


When Six Volt Bulbs Are N. G. in a Six Volt System

Q.—We have a customer with a Baby Overland 1924 model that is giving trouble with dash and tail light. Both globes light up o. k. but not bright enough. Globes are 6-8 volts, 2 candle power. We also tried the regular Overland equipment globes which are 6-8 volts, 3 candle power, but we do not get any light at all. Head lights are good and bright. Can get good dash light by grounding outside of dash light to dash light mounting screw or any other metal part of car. Have inspected wire connections and ground connections and all seem to be o. k.—Geo. N. Smith. Meridian, Texas.

You are using the wrong kind of bulb. You should use 3-4 volt, 2 candle power bulbs. We are showing an illustration which will give an idea of the reason for using this sort of bulb. From the ignition and lighting switch current goes directly to both head lamps. The current for the tail lamp however, must come through the dash lamp. We have a total of 6 volts available at the switch but this voltage divides up in going through the tail and dash lamp, so that each lamp only gets three volts.

For this reason 3-4 volt lamps must be used and they must be the same kind and the same size, otherwise one will be somewhat brighter than the other and



With dash and tail lights in series, each lamp gets half the voltage

will burn out sooner. The reason for the dash lamp lighting up brightly when you ground the socket is that you put a full 6 volts on it and as is a 6-volt bulb it then operates normally.

THIS STARTER HAS NO PEP

Q.—Send wiring diagram and starter instructions for 1916 Dodge Brothers car. We do not seem to get enough voltage to turn the engine over. Have installed new generator and starter wires. Tell us where we may look for trouble in the starter outside of brushes and starter switch.—McIntyre Kent Motor Co., Tuscola, Ill.

We are mailing you page 52 of the November 6, 1924 issue of MOTOR AGE which gives the diagram together with information in regular to the regulator. It is essential to have the wires properly

connected and you can check this by means of the diagram. Failure to operate as a starter might be due to corroded battery terminals and you can check this by taking the voltage of the battery across the battery cables rather than across the battery posts while the starter switch is being operated. If you have no voltmeter you can get a rough idea of the condition by using a test light. Both the shunt and series field assist when operating as a starter.

Snap Fuse in and Out of Clip

It would accordingly be well to snap the fuse in and out of its clip to see if you have a shunt field circuit while the starting switch is being operated. The regulator contacts should also be touching each other to insure having a shunt field. On the later type Northeast motor generators, the third brush is black while the main brushes are yellowish showing more copper content. It is essential that the yellowish brushes be used wherever starter current flows. If you have a high reading ammeter you can get some idea of the condition by putting it in the circuit. We would estimate a current of from 175 to 200 amperes at the start, dropping down to from 85 to 100 amperes while cranking the engine.

Legal Questions Answered—

WEIGH FACTS CAREFULLY

Q.—Would you kindly examine the enclosed literature and report upon the honesty of the same. From facts supplied by friends I have formed the conclusion that it is a scheme to get the money of credulous people. If you deem it advisable, kindly publish the facts as they appear to Mr. Gustin, head of the Legal Department.—A Reader.

Whether the scheme to sell you Ford Motor Company of Canada stock as outlined in the promoters' literature is fraudulent, or not, is a question of whether the statements in the literature are true or false and, if false, made with intent to get your subscription, and does get your money to your loss. I do not assume to pass upon the facts, but will set out a few observations: The literature describes a brilliant past and paints a rosy picture. This smacks of the time worn stock jobbing proposition.

Note that you are extended a privilege! And you are limited in this special privilege! What object does this company have in desiring to distribute to a large number of persons? They admit that only a block of this stock is in their possession! It must cost them more to sell to a larger number than to one or a few. Then there is no informa-

tion to fully inform a subscriber as to just what he gets in value for his money? It must be assumed that the promoters here expect a profit from the deal. Evidently they do not pass to the buyer the original Ford stock. Then what is the security behind the shares the buyer gets?

Assuming that the proposition is square and honest as to the facts and representations made, let's look at the business side. A news item states that on the fractional basis for the banker's shares, a full Ford share would cost \$750.00 or more. Apparently the promoters have issued 100 bankers shares at \$7.50 to cover each Ford share they hold. If this be true, then they want to sell their shares at a nice profit, above what they could get for them in the open market. A recent paper quotes the Ford Motor of Canada stock at \$485.00 a share, on the New York Curb not long ago it was \$495.00 and better. Ordinarily the brokerage fees are smaller than the commissions given salesmen for finding and selling a customer unlisted stocks or bonds. Ford of Canada stock might be now worth \$750.00 a share, intrinsically, and may become more valuable, but at

By WELLINGTON GUSTIN
of the Chicago Bar

the time this is written its market value is below \$500.00. Who would knowingly pay more? This is the best and final argument against buying something else that may represent parts of shares.

But, of course, the difficulty is knowing the facts and fully understanding the significance of all the factors involved in the beautiful literature received by you regarding the Ford shares and the Bankers' shares. Perhaps the term Bankers' shares will awe the credulous, and it may be the term was used for such a purpose. However, regardless of this lengthy analysis you or your friends will go along and buy these shares, or some such shares.

It's human nature, as Barnum indicated. Why, bless you, the protecting wing of the U. S. Government is warning its people on this side of the border every day as to new schemes to defraud, yet every day the mulcting process goes merrily on and the losses annually by the suckers here would put a good sized European Government, now run down at the heel, back into its boots and on its feet again. Do you think this warning will save you or your friends? If it does, it will be worth this effort.



Motor Age's Flat Rate Forum

EDITED BY B. M. IKERT

Competition Among Mechanics Helps Reduce Time on Repairs

EVER since the flat rate system has come into use service stations and shops in general have tried to cut down the time required for various operations because by so doing more work can be performed in a given time, men make more money and the shop profits are larger.

Various methods are used by shops to stimulate efforts among the mechanics to cut down the time factor on a job and where the mechanics are paid by the job, piece work, naturally it is to their advantage to save as much time on a job as possible.

Many Devices Evolved

To that end many devices, tools and methods have been evolved by the men in the shops and in some cases it often is possible to even cut the price of a certain operation because of the reduction in time. This means the customer benefits, of course, and while no shop should operate at a loss, it is an injustice to place a high price on a job which the men constantly are doing in less time than at first required. The reduction to customer is then the logical thing to do.

One dealer uses a novel plan in his shop for stimulating efforts on the part of the men to cut down the time required for various repair operations and adjustments and in addition, the plan makes possible a little larger payroll

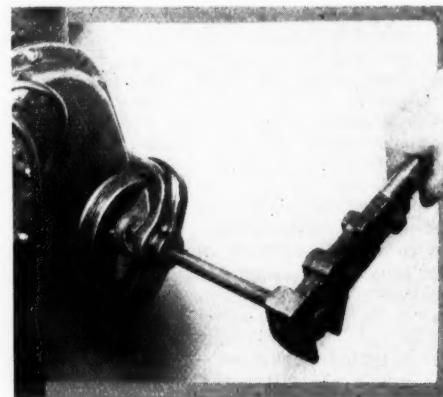
for the men. Flat rate is really behind the whole plan, which briefly is this:

He divides the men in the shop into two teams and every two weeks the teams are rearranged so the teams always are made up of a different group of men.

Each team has a captain, these being the men who made the most money in their particular group. They select their own group for the following two weeks and so on. The foreman gives out the work and he uses judgment to see that the jobs are about evenly distributed and also that each team gets about the same variety of work.

The team turning out the work in the two weeks gets a bonus and this is divided among the men of the winning team. Naturally this means each man is going to do all in his power to see his team win and if a mechanic knows a short cut on a job he passes it along to his team mates and eventually this short cut gets to all the men.

This has made possible cutting down the time for many of the jobs and effectively proved flat rate the best system as yet used for selling automotive repair work and adjustment. Good competition among the men in this way not only makes the flat rate a decided success but helps greatly in upbuilding shop morale.



THINGS THAT HELP FLAT RATE
Equipment makers are doing their part in making flat rate profitable. Pulling a gear, sprocket or pulley is often a difficult job, but with a puller such as shown the most obstinate pulley or gear readily is removed. Without the proper tools such jobs often run into considerable time

Flat Rate Manual in Demand

To the Editor of MOTOR AGE: Enclosed please find \$1 to cover cost of two copies of the Flat Rate Manual as published by you in issue of May 14, 1925, covering the rates published in issues of April 30.

We find them to be a very good guide in our business as well as other information we obtain from your publication.

Thanking you for your attention, we remain—Universal Garage, Daytona Beach, Fla.

To the Editor of MOTOR AGE: Please send us 20 copies of your Flat Rate Manual as published in your issue of MOTOR AGE of April 30th.

It is just what we have been wanting for several years past.—Northland Motors Co., Menominee, Mich.

To the Editor of MOTOR AGE: Enclosed find post office money order for 50c for which please send me one copy of MOTOR AGE Flat Rate Manual as advertised in the May 14 issue.

I think it is the best I have seen. More power to you.—R. H. Huebner, Tucson, Ariz.

To the Editor of MOTOR AGE: Enclosed is check for \$1 for which please send me two pamphlets containing the flat rates.

You deserve great credit and the thanks of the trade for gathering and compiling this information.—Danker & Donohue Inc., Boston, Mass.

MOTOR AGE'S FLAT RATE FORUM

No. 17

CHEVROLET FLAT RATES FOR ENGINE, TIMING GEARS AND OIL SYSTEM

Manufacturer's
Official
Designation

	Time
55 Timing gears. Replace (includes removing and replacing radiator, generator timing gear cover and any other minor operations necessary and retime motor)	2.2
(a) Replace camshaft, cam gear or adjust cam shaft for end play or all three	.5
(b) Grind in timing gears	.5
(c) Camshaft. If replaced adjust tappets	.3
(d) Camshaft gear. Remove shaft and replace gear	.3
(e) Crankshaft gear. Replace	.2
(f) Generator gear. Replace	.3
56 Gear case cover gasket. Replace or install new case cover or both. (Includes retiming motor.) (Radiator in place)	1.5
57 Generator. Remove and replace, install new gear or gasket or both. (Includes retiming motor.) (Radiator in place)	1.0
58 Push rods. Adjust (superior motor with upper adjustments). (Four-ninety motor with lower adjustments)	.5
59 Oil pump. Remove and install	.3
(a) Replace any needed parts	.3
60 Replace any one oil line	.2
61 Repack oil pump gland nut (all models with front driven oil pump)	.3
62 Repack oil pump gland nut (drive from rear of generator)	.5
63 Oil lines. Tighten all connections	.2
64 Oil pressure gauge. Replace	.2

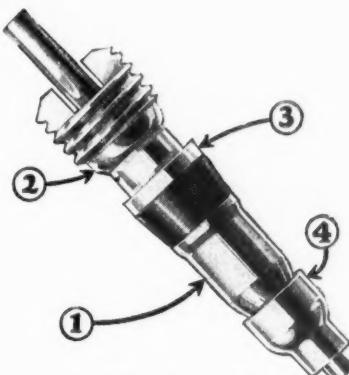
THE MARKET'S NEW OFFERINGS

Accessories—Equipment—Supplies

Dill Valve Inside

AN advanced model of Valve Inside, recommended by the makers as contributing to the end of uniformly correct air pressure and overcoming usual causes of tire valve trouble, has been developed by the Dill Manufacturing Company, Cleveland, Ohio. The delicate spring and stem are protected against jamming, bending or damage by a metal barrel which completely encloses them (See "I" in illustration). The threaded sleeve at the top (2) is swiveled, which prevents the large rubber gasket from turning—the common cause of worn out gaskets and leaky valves. As a second line of defense against possible loss of air a carefully tapered metal seat (3) is placed right above the rubber gasket, making a metal-to-metal contact and effectually sealing the entire unit.

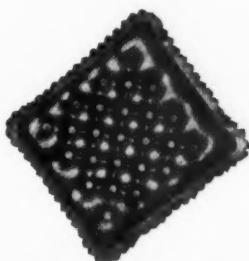
At (4) is a soft rubber gasket which constitutes the valve seat and the end of the metal sleeve (1), which seats on it, is especially hardened and burnished to prevent sticking to the rubber gasket below.



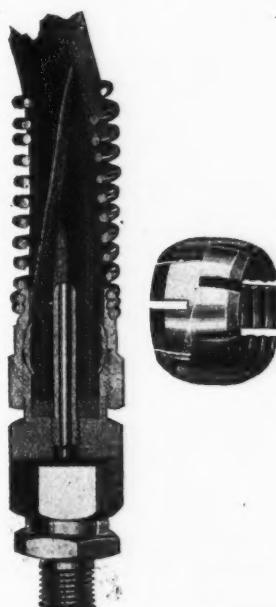
Dill valve inside

Rubber Airo-Cushion

APNEUMATIC cushion for automobile and machinery seats, office chairs and other purposes is a new product of the K & W Rubber Company, Delaware, Ohio. It is designated by the company as the Rubber Airo-Cushion, being made entirely of rubber and being waterproof and washable. List prices are: Brown, \$2.50; red, \$2.75; extra large (red only), \$3.



Rubber Airo-Cushion



Eastman air hose coupling

Eastman Air-Hose Coupling

AFIRM grip on the hose, prevention of seepage and prevention of the fabric's destruction by the air are assured by the Eastman Manufacturing Company, Manitowoc, Wis., in the use of a high pressure airhose coupling which this company offers to the retail trade. All Eastman couplings are equipped with a spring guard which prevents kinking near the end of the hose where wear and strain usually are most severe. They are made of brass bar stocks and tested to stand the highest pressures. The coupling is made in three pieces, the compression sleeve and two compression collars. When screwed together they exert heavy pressure on the laminated ends of the sleeve, forcing it into the fabric of the hose. The compression sleeve is the key to the coupling. The harder you pull the tighter it grips the hose. Retail prices from \$1 to \$1.40 each, depending on size. Packed 12 to a carton and ten cartons to a case.

Walkers Balloon Tire Jack

EVERY balloon tire requirement desired in a jack is said to be met by a new balloon tire jack which is being made by the Walker Manufacturing Company, Racine, Wis. While this device is only 7½ inches high its telescoping screw makes it possible to raise any car up to 15 inches from the ground.

This Walker jack is ruggedly built, with ball bearings and a crank type turning handle 33 inches long which can be folded. It sells for \$5.25.

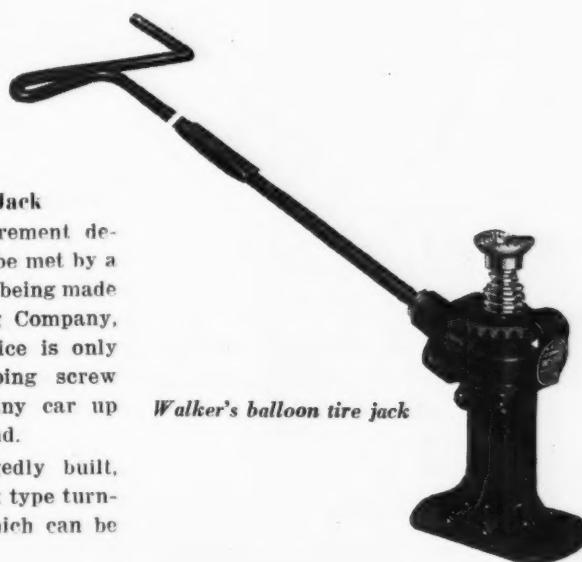
Perfection Silencers

THE Perfection Gear Company, 213 North Morgan Street, Chicago, is on the market with an offering of "Perfection Silencers," designed to eliminate clicking and tapping of valves and tappets. It is said that they overcome the necessity of constant tappet adjustments, permit greater clearance and avoid burned, warped or pitted valves. They are made of an extremely durable non-metallic material. The Silent Tappet Screws for Enclosed Valve Motors are priced by sets from \$1 to \$16. Silencers for overhead valve motors, by the set, are priced from \$1.60 up. Specific prices will be furnished by the manufacturers.



Perfection Silencers

There is an old saying which still is good that "well displayed is half sold." This applies to the accessory store of today. Don't "hide" your stock from the customer. He will never buy what he never sees.



Walker's balloon tire jack

GETTING More OUT of the SHOP

Franklin Air Compressor, Spray Gun and Lighting and Sign Post

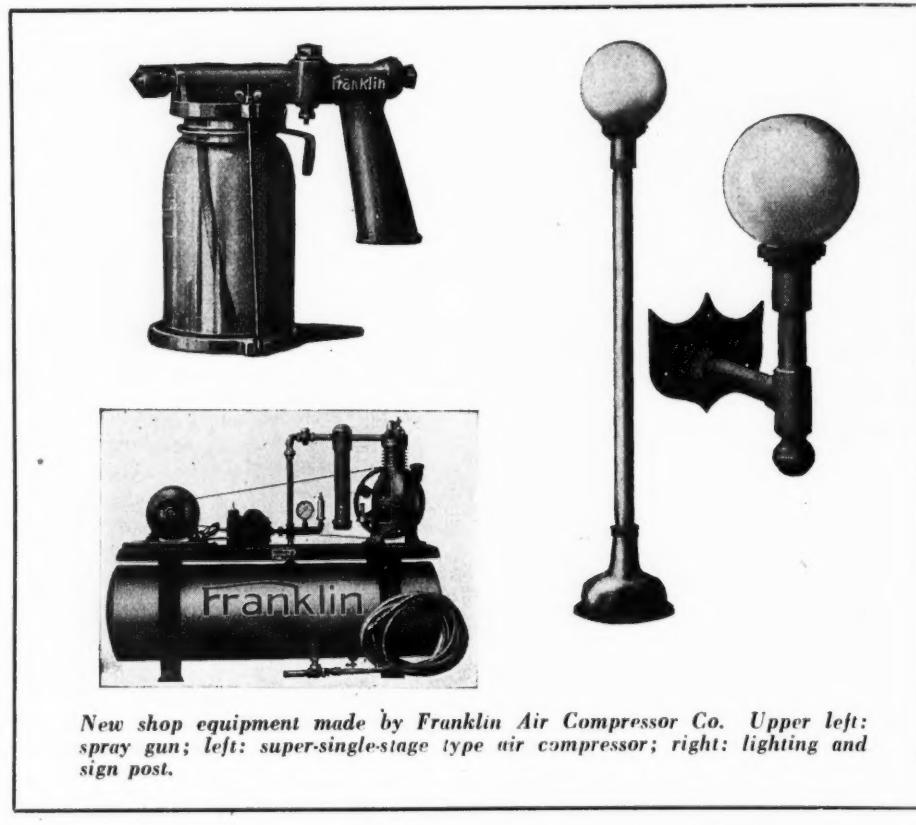
The Franklin air compressor of the super-single-stage type is so built that when the pressure has reached 150 lb. the engine is stopped automatically and cannot be restarted until the pressure has fallen to 120 lb. The outfit is said to be economical in operation. The engine holds one-third of a gallon of gasoline and when running at normal speed this will last about three and one-half hours, continuous operation. The oil separator, safety valve and special malleable iron air line manifold are all special Franklin features. The price of this outfit is \$225.

The air spray gun is useful in paint shops, particularly for the application of lacquer finishes. It is made of aluminum and brass with a valve of the plunger type, cone shaped nozzle, convenient trigger and pistol grip handle. The Franklin spray gun operates on from 40 to 150 lb. pressure and the gravity type intake tube makes it possible to paint ceilings or other overhead objects with a constant flow of paint, it is stated. The price of the gun without hose is \$15.

Designed particularly for service stations, garages and etc., the Franklin lighting and sign post can be placed wherever exterior illumination is desired. It is made in two types, upright and wall bracket. These are cast iron and tubing. An opalescent globe is furnished and in the top is an aluminum socket wired to the base where an opening makes it convenient to make the necessary connections. The upright type is 7 ft. 6 in. high and the diameter of the base and globe 16 and 14 in., respectively. The wall bracket type is 22 inches from



Dunning Junior Automatic Air Compressor



New shop equipment made by Franklin Air Compressor Co. Upper left: spray gun; left: super-single-stage type air compressor; right: lighting and sign post.

the wall and 20 inches high. The price is \$32. The above items are made by the Franklin Air Compressor Works, Norristown, Pa.

Dunning Junior Automatic Air Compressor

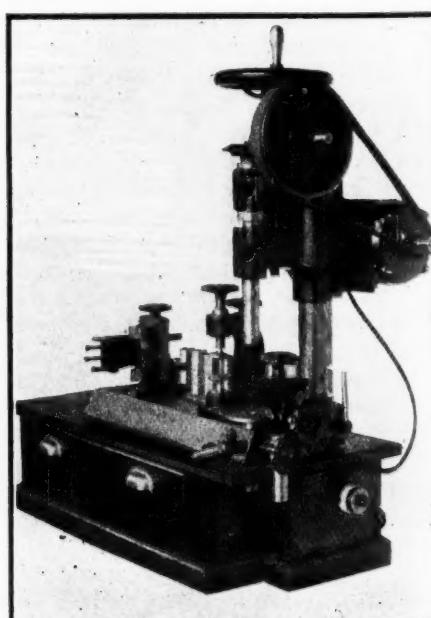
Announcement is made by the Dunning Compressor Co., Ashburner and Hegerman streets, Holmesburg, Philadelphia, of the introduction of its Junior automatic air compressor, designed especially for small filling stations, garages, tire shops, paint or machine shops. It has two cylinders with a 2-in. bore, an automatic starting and stopping switch, automatic unloader pressure gage, safety valve, cloth pinion (spiral), 15-gal. heavy duty tank, heavy hose and couplings, and the working pressure is 125 lbs.

Only three moving parts are used in the construction of this compressor. The valves are large and cone-shaped and a one-piece piston is used. Lubrication is by means of pressure feed. There are no connecting rods, wrist pins or babbitted bearings—nothing in the way of bolts, nuts, cotter pins or lock washers in the interior, and the manufacturer claims that it is as near fool and trouble-proof as it is possible to make an apparatus of this character.

Some 16 models are made, mostly stationary, with some portable. The largest has a capacity of 10 cu. ft. per minute, all operating practically noiselessly, it is said.

CORRECTION

In the June 4 issue of MOTOR AGE, page 24, there appeared a description of the Shoemaker bearing machine, made by the Shoemaker Automotive Equipment Co., Freeport, Ill. Through error, the picture accompanying the description was designated as "Council Cylinder Hone," a description of which device also appeared on that page. Below is shown a view of the Shoemaker Bearing Machine.



Shoemaker bearing machine

EDITORIAL

Cooperation in Sight

THE decision of the directors of the National Automobile Chamber of Commerce to cooperate with the National Automobile Dealers Association in a series of sales conferences is a hopeful sign. It is another mark of the present tendency of the producing and the distributing branches of the automobile business to recognize their mutual dependence and to work together for their mutual benefit. The sales congresses conducted by the N. A. D. A. in the past have been productive of much good. With the active cooperation of the N. A. C. C. still greater accomplishments should be recorded. The persistent and intelligent work of the officers and executive staff of the N. A. D. A. is being rewarded and every dealer should give his active support to this great association of his fellow tradesmen.

Are You a Valued Customer?

EVERY automotive merchant has his customers—some that he values and others that do not mean so much to him. It is safe to say that the successful retailer values the regular customer who is willing to pay a fair price for good merchandise and cheerful service much more than the casual customer who is always trying to beat down the price and whose business, if obtained at all, is practically without profit although considerable in volume.

The automotive merchant is also a customer—a customer of the car manufacturer, the car distributor, the accessory and parts jobber, wholesaler or distributor. He buys before he can sell and he is a customer of those from whom he buys.

As a car dealer he usually buys under a contract that controls the terms of his business arrangement, but as a merchandiser of sundry automotive equipment and supplies he buys in the open market. He is at liberty to give his patronage where he will. He can be the customer of whomsoever he desires provided such an arrangement is mutually satisfactory.

The wholesaler is a merchant, like the dealer. His customers are dealers and he values some of them more than others. The poor credit risk he may refuse to sell, and the dealer who comes to him when he can't get the desired merchandise elsewhere, or only when he sees a chance to pick up bargain merchandise that the wholesaler has to sacrifice, is not likely to be considered a profitable customer. And if he is not a profitable customer how can he expect to be treated as one?

The wholesaler is performing a distinct public service in the distribution of automotive merchandise and the

service that he renders the dealer entitles him to a reasonable profit.

The steady customers who buy from him day after day, at fair prices, and help him to earn a living and show a profit for his business are the ones that he values. These valued customers of the reliable and progressive wholesaler soon find themselves in an advantageous position. If they have a rush demand for merchandise not in their stocks the wholesaler will go to any length to get it to them. The temporary need for unusual credit will be taken care of. Defective or damaged merchandise will be made good without question. Any complaints will be speedily adjusted. In every way the business relations of a reliable wholesaler and his valued customers will be mutually satisfactory.

How does one become a valued customer?

He buys goods of quality from a reliable house.

He pays a fair price.

He does not scatter his buying simply because he can get an item a little cheaper from another source.

He pays his bills promptly.

He stands by the house that stands by him.

Insurance Rates Are High

INSURANCE is a big factor in the automobile business. Probably more than three-fourths of the new cars are sold on time and the holders of the installment paper must be protected by insurance. This means that considerably more than 75 per cent of cars are insured the first year in the owners' hands. The percentage is much smaller for cars older than one year. In Chicago and Cook County only about one-third of all cars in operation are insured. The proportion should be much higher and no doubt would be if it were not for the rates being so high that many owners consider them exorbitant.

The National Automobile Chamber of Commerce has taken cognizance of the insurance question. Its directors are considering the advisability of going into the insurance business with avowed purpose of bringing rates down and making it easier for car owners to be protected, and thus eliminating one phase of sales resistance which is today operating against the automobile business.

There is no doubt that the automobile insurance business needs to be reorganized. Rates vary too greatly in adjacent and similar localities and on cars of similar design. The car owner looking for insurance can get almost any kind of quotation on rates, but he has no way of determining what a fair rate would be for dependable protection of his vehicle and his family.

Whether or not the N. A. C. C. decides to go into the insurance business it is possible for it to perform a great service for the industry by making a complete study of the insurance situation and making reliable information available to the car owner.

Competitive Conditions Rule Price Cuts

Trade Sees No Basic Ground For Reduction of Car Costs

General Opinion Is That Present Downward Revisions Are for Strategic Purposes

NEW YORK, June 15.—With the peak of spring production passed, talk of price reductions in passenger car lines has developed in some parts of the automobile industry. Hupmobile, Willys-Overland, Hudson and Apperson all have made cuts on one or more models, but up to the present time no indications of general reductions are present.

It is pretty generally agreed in the trade that price reductions at present are likely only in an effort to secure a competitive advantage, since there has been no basic change in wages, material prices nor production methods to warrant widespread price declines at this time.

While production for May was slightly behind the record-making April total and while another decrease in output is expected in June, some companies still are going along at full speed and report sales equal to production. But readjustment of schedules to meet the usual seasonal sales drop is going on in most factories.

Profits Highly Satisfactory

Profits so far this year have been highly satisfactory for most automobile companies. A number of concerns already have earned a full year's dividend and others have come close to that mark. This would indicate that earnings by the end of this year will show marked improvement over 1924 when on a total capital invested a group of 8 representative companies earned slightly over 12 per cent, as compared with about 7 per cent earned by a group of representative steel companies and with 4.4 per cent earned by a representative group of railroads.

New models have been coming through steadily for the last three weeks and five or six additional announcements are scheduled for the next fortnight.

Talk among body designers indicates a belief that sporty lines and lively colors which characterized last year's models will be continued in the new crop of cars but that more attention will be given to comfort features.

Slight Decrease Noted in Toledo's Factory Payroll

TOLEDO, June 15.—Slight decrease in number of workers on Toledo payrolls was registered as a result of balancing of production in the automotive industry. Some of the foundries and other allied institutions have noted in a slowing in orders.

Car Maintenance Is Figured by Pupils

MINNEAPOLIS, June 15.—Sixth grade pupils in the Jackson School, St. Paul, are laying the foundation for their mathematical education in the automobile business. They buy tires, tubes, gasoline and even figure the cost of operating a car. This feature is a reward to pupils who do their regular arithmetic work industriously. Work on the theoretical car relieves the drudgery of decimals, etc. The children are posted up on price lists of cars and accessories and at repair shops and filling stations for the cost of repairs, gas and oils. Find the total cost per mile when in one season the expenses of a car come to \$742 and the distance covered is 8,000 miles, is a sample problem.

However, employment is now more than 50 per cent better than it was a year ago at this time.

The Willys-Overland Co., is maintaining a normal production just a few cars under the peak reached last month and indications from the field are that sales are holding up well in all sections of the country.

In Toledo sales of the local factories have never been so great as they are at the present time. Some dealers are beginning to feel a slight slackening in demand for cars but in general the business is on a sound basis.

Credit conditions are exceptionally good with plenty of money for all purposes.

RICKENBACKER VISITS DEALERS

DETROIT, MICH., June 15.—Captain E. V. Rickenbacker, vice president and director of sales of Rickenbacker Motor Company, is on his usual summer "swing around," and before returning to the factory will call on all important dealers in the middle west.

"Business is wonderful," said Mr. Rickenbacker, "and we want to keep up the momentum. Our visits will have a two-fold purpose—to tell distributors of our own plans for the summer season and to study conditions generally throughout the country as a basis for future operations."

INCREASE CAPITAL STOCK

PHILADELPHIA, June 15.—The R. M. Hollingshead Co., of Camden, N. J., manufacturer of Whiz products, has filed articles at Dover, Del., increasing its capital stock to \$20,000,000 to care for business expansions.

Six Passengers Can Ride In New Auburn Roadsters

New Units Will Carry 3 in Front and 3 on Special Rear Deck Seat

AUBURN, Ind., June 13.—Six-passenger roadster models on both its six and eight-cylinder chassis, have been introduced by the Auburn Automobile Co. Three passengers are carried in the front seat and three in a seat in the rear deck which is reached by a convenient door. List prices are \$1,495 and \$1,975 respectively.

Finish is pyroxylin lacquer, polished to a high lustre and attractively striped. The upholstery is hand-buffed brown Spanish leather.

Engine heat indicator, gasoline gage, ammeter oil gage and speedometer are all mounted in one panel under glass on the instrument board. The emergency brake is operated by a pull type control located under the instrument board. Lighting switches are mounted on the steering wheel and the ignition switch is also located there on the eight-cylinder model. Rear vision mirror and automatic windshield cleaner are regular equipment.

Authorized Ford Dealers Number 9,800, Says Factory

DETROIT, June 12.—The number of authorized Ford dealers is now 9,800 according to a statement issued by the factory. In addition to these there are 32,000 authorized Ford service stations throughout the country, making a total of 41,800 places where Ford products are serviced. The company estimates that there are now 9,000,000 Ford cars and trucks in use in the United States.

FIRE COSTS \$40,000

DALLAS, Texas, June 15.—Fire practically destroyed the building and stock of the Automotive Electric Co., on South Ervay street. The loss was approximately \$40,000, practically covered by insurance. Manager George W. Goodwin announced the concern would open for business in temporary quarters immediately and continue operations until new quarters could be arranged.

P. W. SLOAN PROMOTED

DETROIT, June 13.—P. W. Sloan, who has been service engineer of the Timken-Detroit Axle company in charge of the field service men, has been appointed service manager of the company.

Better Merchandising Object Of Oakland Summer Schools

Two-Day Sessions at Dealers' "Front Doors" to Be Held Until Last of September.

DETROIT, June 15.—Representatives of the sales development department of the Oakland Motor Car Company have begun a nation-wide tour among Oakland dealers to conduct courses in better merchandising. Each school will last two days and they will be held until the last of September, when all Oakland dealers are expected to have been covered.

The present schools are departure from the ones held earlier in the year. These were held in the larger cities and lasted a week. The present series will be brought to the "front doors" of the different dealers.

According to W. M. Chamberlain, director of sales development at Oakland, the schools will be primarily for dealers, although salesmen will be encouraged to attend. The main purpose will be to help the dealers train their salesmen. In doing this such points as prospect lists, salesmen and prospect control system, demonstrations and conduct of the showroom will be carefully analyzed.

Former Oakland President Buys Lavine Gear Company

MILWAUKEE, June 13.—George H. Hannum, former president and general manager of the Oakland Motor Car Co. and of the Saginaw Products Co., the latter mainly engaged in the manufacturing of steering gears, has formed the Hannum Manufacturing Co. of this city.

Mr. Hannum has taken over the plant and business of the Lavine Gear Co. of Milwaukee and will manufacture motor parts, specializing on the Hannum steering gear which will be particularly adapted, it is claimed, to balloon tires and heavy duty trucks.

In 1912, Mr. Hannum became factory manager of the Jackson-Church-Wilcox company of Saginaw, Mich., makers of Jacox gears. The following year he was chosen general manager and when its name was changed to the Saginaw Products Company in 1918 upon its expansion, Mr. Hannum was made president and general manager.

MOVE AU-TOW-LINE OFFICES

CHICAGO, June 13.—General offices of the Cline-Florsheim Corp., manufacturers of the Au-Tow-Line have been moved from Chicago to 1154-58 Dorr Street, Toledo, O. The move consolidates the general offices and the factories and is in line with a program of expansion made necessary by increasing business. Much larger space than formerly was available has been provided at the factory for production and administrative purposes.

Salesmen Named for \$100,000 Club

ROCHESTER, N. Y., June 13.—Fred Hutchinson and Harold Clark, salesmen for the Miller-Lee Motors, Willys-Knight and Overland distributors, have been elected to membership in the Willys-Knight Hundred Thousand Dollar Club. Both have sold more than \$100,000 worth of cars.

As a reward for their good record they were taken on a tour of the Willys-Overland factories and given a big banquet, a golf tournament and an insignia by John N. Willys, together with other members of the club.

Leavitt Co. Now Has Peerless Distribution on Pacific Coast

LOS ANGLES, June 15.—With the relinquishment by the Stanley W. Smith Co., Inc. of the Peerless distributing franchise in Southern California, and its acquisition by the J. W. Leavitt & Company the Leavitt organization now controls Peerless distribution on the entire Pacific Coast. The Leavitt Company first acquired the Peerless franchise in Northern California two weeks ago but just concluded arrangements for the Southern California and coast-wide distribution.

For the time being, according to local announcement, the Peerless will be merchandised with the same sales organization as handles the Oldsmobile, which has long been represented in California by Leavitt.

The Stanley W. Smith Company, which is one of the pioneer automobile concerns in Southern California, has retired from the distributing field and henceforth will confine its activities to retailing Hudson and Essex cars as an associate dealer. The Smith organization added the Hudson and Essex to its Peerless line about two months ago.

ROAD LAUNCHES BUS DIVISION

MINNEAPOLIS, June 13.—The Great Northern Transit Co., subsidiary of the Great Northern Railway, St. Paul, Minn., has asked bids for the 20 passenger buses capacity 25 to 35 persons. This company has not announced its plans, having just been capitalized at \$1,000,000.

FIRESTONE BRANCH MOVES

ATLANTA, Ga., June 15.—The southeastern branch of the Firestone Tire & Rubber Co., in Atlanta, moved recently into the company's new home at 570 Whitehall street, where more commodious quarters are provided than in the former branch.

Greater Fall Selling Drive Is Planned by Chevrolet

Program for Intensive Campaign Outlined at First Annual Sales Convention in Detroit

DETROIT, June 15.—Plans for a greater fall selling campaign were outlined to some 450 delegates to the first annual sales convention held in the General Motor Building by the Chevrolet sales organization which came to an end Wednesday, June 10. Included among those who attended the meeting were the advertising and service executives located in Detroit, the five regional sales managers, 26 zone managers and 350 field representatives.

The keynote of the convention was expressed by R. H. Grant, general sales manager who told the delegates that it was for the purpose of "securing a better understanding of our responsibility to the public, the dealer and to the Chevrolet Motor Company."

Testimonials in the form of an ivory mounted gavel and a solid service were presented to Mr. Grant and D. S. Eddins, formerly assistant general sales manager of Chevrolet, but now general sales manager of the Olds Motor Works at a banquet held in the Hotel Statler which concluded the convention.

Minneapolis Promised Board Track for Automobile Racing

MINNEAPOLIS, June 15.—Prospects of major automobile racing for the northwest are promised through a project looking to construction of a mile-and-a-quarter board oval eight miles north of Minneapolis during the present summer. The track will be built between Robbinsdale and Osseo, near the Jefferson highway, a point which spectators could easily reach. It is believed construction will be finished in time to stage the inaugural race in September.

The Northwest Speedway, Inc. is the organization behind the movement. No stock is to be sold, financing to be handled through a bond issue and sale of season tickets. The Prince Construction Company, of Oakland, Calif. which built board tracks at Altoona, Charlotte, Culver City and other places has been engaged to build the Northwest course. Upon completion of the track here Minneapolis expects to receive a franchise from the A. A. A. for holding two official A. A. A. races yearly.

HEAVY CAMP GOODS OUTPUT

WISCONSIN RAPIDS, Wis., June 13.—The Prentiss-Wabers Products Co., Wisconsin Rapids, Wis., manufacturing tourist cook stoves, camp tables and chairs, and similar goods, has just made a record of production by reaching a daily output of 2,557 complete auto camp stoves, 157 sets of tables and chairs, and 60 of the latest type of folding arm chair, recently added to the line.

Indianapolis Will Keep Ford Plant Until After Election

New Administration May Not Insist on Costly Changes for Company

INDIANAPOLIS, June 13.—The Indianapolis Ford branch and assembly plant will continue here until after the city election in the fall and until the new city officials take office, was the statement made authoritatively here today by Branch Manager Steinmetz.

It has been understood that the branch assembly plant here would be closed this year because of adverse action taken by city officials who voted to open a street adjacent to the plant which the city plan commission expected to close in elevation plans.

When this announcement was made months ago it was reported that the change would cost the Ford plant some \$200,000, in rearrangement of the plant to conform with the opening of this street through the track elevation. At the time it was reported that the plant would be closed because of this, and the assembly plant that has been in operation for several years would be removed to the Hammond, Ind. Ford assembly plant.

Rumors have been current here for some time that "the plant will soon be closed," but the official announcement gives a new slant to the affair, and there seems a possibility that the new city officials may reconsider the present elevation plans that were fought by the Indianapolis Chamber of Commerce. Many leading business men believe that the opening of the street and the disadvantage to the Ford plant is not in the best interest of the city as a whole.

The plant employs about 800 persons when in full production, has a very large pay roll and is considered a business asset to the city.

Ford Demand Shows Increase During Last Ten Days in May

DETROIT, June 15.—Sales figures of the Ford Motor Company for the month of May show a continued good domestic demand for Ford cars and trucks, the last ten days of the month showing a substantial increase over the previous ten days.

The figures also disclose record-breaking sales abroad and in the high-price car field a growing demand for Lincoln cars. In fact, the Lincoln sales in the United States during May went to a new record with 968 deliveries to customers, exceeding by more than 50 the record established in April.

Ford car and truck sales for the month reached a total of 201,779 of which number 19,576 were foreign sales. This is a record for foreign deliveries and is more than 1,100 above the April sales.

GRAY-HAWLEY TO EXPAND

DETROIT, June 13.—Emmett P. Gray has taken over entire control of the Gray-Hawley Manufacturing Company and is making plans which call for greater expansion. The Gray-Hawley Company manufactures everything for the control of the exhaust from the motor manifold to the extreme rear of the car including the heating system. The company recently sold the patent rights of its new heater and muffler to the AC Spark Plug Company of Flint.

New York-Chicago Automobile Salon Dates Are Announced

NEW YORK, June 13.—New York's twenty-first annual Automotive Salon will be held November 15-21 and the eleventh annual Automobile Salon in Chicago will be held January 30-February 6, coincident with the national show in Chicago, according to an announcement here by the Automobile Salon, Inc.

The eastern exhibit will be held as usual in Hotel Commodore where greater space than formerly is promised for the display of fine motor cars and custom coachwork. Chicago's salon will be held again at the Drake Hotel.

It is believed by those directing plans for the exhibits that space demands this year will exceed the available space at both shows. Reservations already received for the New York salon are said to approximate the space reserved at the Commodore.

Dodge Brothers Sales Break All Records in Five Months

Increase in America Is 15.4 Per Cent and Overseas 48.6, Says Report.

DETROIT, June 13.—Total sales of Dodge Brothers motor cars for the first five months of 1925 broke all records for the corresponding months of previous years, according to official figures just released. Sales in the United States and Canada from January 1, to June 1, 1925 increased 15.4 per cent and overseas sales 48.6 per cent over the same month of last year.

Total sales including United States, Canada and overseas for the present year will exceed those for 1924 by 20 per cent, according to factory officials. They are expected to exceed those of 1923 by more than 50 per cent.

According to reports received from dealers, they have been unable to accumulate the stocks desired for their spring demand, despite the increase in factory production which was increased from 900 to 1,100 cars per day.

An analysis of the market and financial conditions recently made by the company shows that an increase of approximately 15 per cent will be shown in the sales for the remainder of the year as compared to the corresponding period for 1924.

25 Years Ago In the Automobile Industry As Recorded In MOTOR AGE

(From MOTOR AGE of June 21, 1900)

The Gordon-Bennett Cup Race

It is over. Charron won the race. France retains the challenge cup. The one American competitor made a plucky and creditable showing.

As was generally expected, the Gordon-Bennett challenge cup, the massive silver trophy offered by the enthusiastic American chauffeur and proprietor of the New York Herald, with its Paris edition, was won by a Frenchman and will be held by the Automobile Club of France until a challenge is issued by the representative club of some other country.

At the Paris Exposition

Reports from the Paris Exposition indicate a vast deal of interest in the automobile section, which, however, is not so large as was expected. As a matter of course the French vehicles predominate. Unbiased critics declare though, that the few American machines shown, display more careful workmanship and better finish than any others. The greatest amount of attention is attracted by the racing machines.

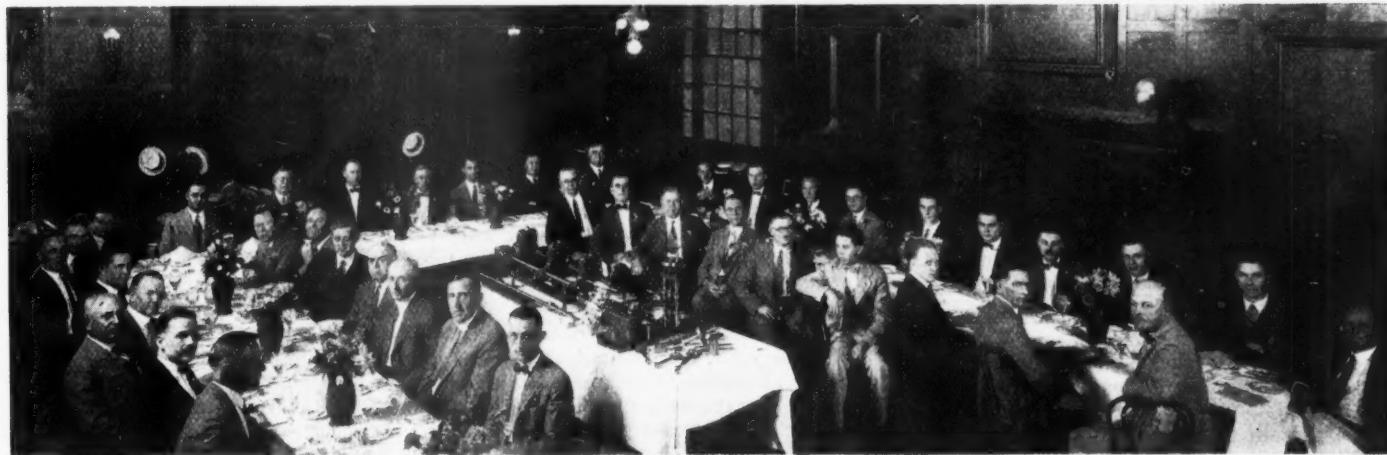
Says Motor Men Need Instruction

W. D. Gash of the Waltham Mfg. Co. says that motor men should take a course of instruction in caring for their machines. He says they know nothing about them and when a machine goes wrong the maker is censured. Many a motor is shipped back to the factory to be attended to which needs nothing but some minor adjustment. One machine was shipped to the factory from Cincinnati, at an expense of \$27 for the round trip and one hour's attention was all that was required. This attention might have been given to it by any fairly well-posted motor man.

Race Ended in Arrest

BOSTON, June 17.—An automobile race was held this morning in Newton and after two and one-half miles had been ridden, the policemen who had been concealed in some trees down the road stopped the race by arresting Albert Champion, the French middle distance cycle rider and Charles Boyden of Harvard College. Champion was on a tri-cycle and Boyden in a steam locomobile.

When Watkins Rebabbiting Service Managers Gathered for Dinner During Annual Conference in Wichita, Kansas, May 27-29



DURANT PROFITS DROP

NEW YORK, June 15.—For the year ended December 31, 1924, Durant Motors, Inc., reports surplus of \$24,889,848, compared with a surplus of \$41,649,178 on January 1, 1924, and net income of \$767,576, after expenses, compared with net profit of \$2,715,226, after depreciation and Federal taxes, in 1923.

Dividends and miscellaneous income decreased from \$4,405,364 in 1923 to \$2,172,311 in 1924, and administrative and engineering expense from \$1,690,138 to \$1,404,735.

From the surplus on January 1, 1924, plus the net income for 1924 was deducted \$17,526,906 for depreciation, doubtful accounts and revaluation of investments in affiliated companies, leaving a surplus of \$24,889,848.

MAKING NEW VULCAN TRUCK

LONDON, June 15.—The Vulcan Motor & Engineering Company, one of the largest English manufacturers of 1½ to 2½ ton trucks, has announced that they are going into the production of a 4-ton truck. It is equipped with a 4-cylinder Dorman engine, rated at 36 h. p.

New Concern Buys Rim and Wheel Business From Keaton

LOS ANGELES, June 15.—Sale of the rim and wheel business in California by the Keaton Tire & Rubber Company to a new organization known as the Motor Rim & Wheel Service, represents one of the most important developments in automotive distribution on the coast in recent months. W. D. Smith, for years in charge of the Los Angeles factory branch of the Keaton company, is the president and general manager of the new firm, which has taken over the Keaton buildings in both Los Angeles and San Francisco. In the future the Keaton Tire & Rubber Company will concentrate its manufacturing and merchandising facilities on the production and sale of Keaton tires.

75 Mechanical Men Attend D. B. Factory Service School

ST. LOUIS, MO., June 16.—A factory service school for the mechanical forces of the Tate Motor Car Co., Dodge Brothers distributors in St. Louis, and for all the Dodge Brothers dealers in eastern Missouri and southern Illinois, was held in the truck showroom of the Tate Motor Car Co. at Washington and Garrison avenues.

R. G. Word, service division of Dodge Bros., Detroit, was in charge of the corps of instructors sent out by the factory. H. H. Richardson of the Willard Storage Battery Co. of Cleveland and E. L. Trube of the Northeast Service, Inc., Rochester, N. Y., gave instructions pertaining to the electrical systems of Dodge Brothers cars.

D. B. Ferguson, assistant in the Dodge Brothers Service School, was one of the instructors.

The instructions began with the motor and went systematically backward through the chassis. Special tools and apparatus devised for mechanical operations on the Dodge Brothers car were demonstrated.

The parts used in the school were supplied by the Tate Motor Company.

About seventy-five mechanical representatives attended.

PLAIN CLOTHES MEN CAN'T INSPECT CARS

HARTFORD, CONN., June 15.—Connecticut's lieutenant governor has succeeded in having the state law provide that an officer stopping a car for the purpose of inspecting a driver's license must be in uniform. The state official emphasized that Connecticut's motorists are skeptical of plain clothes inspection being prone to regard them as robbers and to step on the gas rather than to stop.

AC BUYS MUFFLER RIGHTS

FLINT, MICH., June 16—Announcement has been received from Albert Champion, President of the AC Spark Plug Company, that the company has purchased from the Gray-Hawley Manufacturing Company, Detroit, Michigan, the patent, manufacturing and selling rights on the new style muffler recently brought out by them.

All tools and equipment will be moved to Flint and production commenced in the AC Company's new East Side Plant.

DE PAOLO WINS AGAIN

ALTOONA, Pa., June 13.—After Tommy Milton had been awarded first place in the 250-mile championship race here today, a recheck by the judges gave the race to Peter De Paolo, winner of the Indianapolis 1925 classic, with a speed of a little more than 115 miles an hour. Frank Elliott was second and Milton third.

Canadian Ford Returns to a Five-Day-Week Schedule

WINDSOR, ONT., June 16.—The Ford Motor Company of Canada, Limited, has returned to a schedule of five days a week. The change has been made in order to provide steady employment for all employes as far as possible and conforms to the policy of the company in such matters. Formal announcement as to how long the present schedule will be maintained is expected shortly.

Officials point out that as the men are working eight and three-quarters hours a day, as compared to the usual eight hours, they are actually working five and one-half days in the five-day week.

Wallace R. Campbell, vice president and treasurer of the company, in a statement, said it had always been the policy of the company to shorten the working periods rather than lay off a considerable number of its employes.

New Corporation Formed to Continue Dorris Business

Will Make Limited Number of Passenger Cars and Concentrate Now on Trucks and Buses

ST. LOUIS, June 15.—Dorris Motors, Inc., has been formed to continue the business of the Dorris Motor Car Co. H. B. Krenning is president of the new company; George P. Dorris, vice president; J. F. F. Culver, secretary and treasurer. The directors are George L. Jeck and Henry Becker in addition to the officers of the corporation.

It is the plan of the company to continue the manufacture of passenger cars in a limited number and to concentrate for the present on the building of trucks and buses.

All the officers and directors of Dorris Motors, Inc., have been connected with the Dorris Motor Car Co. Mr. Krenning was president and manager of the company from 1905 to 1917. He retired from active participation in the affairs of the company in 1917 but recently purchased the entire assets of the Dorris Motor Car Co. for \$115,000 at a public auction and then formed Dorris Motors, Inc., with 3350 shares of common stock with no par value. In the future he will give his personal attention to the company's business.

George P. Dorris, after whom the products of the company are named, is a pioneer in the automotive industry, his activities dating back to the days of the one-cylinder and the two-cylinder car.

Mr. Krenning has announced that the company would give attention to the servicing of all Dorris vehicles now in operation.

Detroit-Bound Chevrolet Men Are Entertained in St. Louis

ST. LOUIS, MO., June 15.—Chevrolet sales managers, their assistants and sales promotion representatives from Memphis, New Orleans, Dallas, Oklahoma City, Kansas City and Denver stopped in St. Louis en route to the Chevrolet factory at Detroit to attend the nation-wide convention there.

During their stay in St. Louis they were entertained by a reception committee of the St. Louis Chevrolet branch.

H. J. Klingler, former Chevrolet sales manager in St. Louis, who has just been promoted to the central organization, left St. Louis with the delegates.

Before he departed, Mr. Klingler was tendered a farewell banquet by the Chevrolet organization in St. Louis. W. J. Burns, formerly of Kansas City, succeeds Mr. Klingler here.

BELFEX WINS DECISION

NEW YORK, June 13—Following four years of litigation between the International Motor Company and Harvey W.

27.43 Miles Per Gallon Made by Rollin in Winning Yosemite Valley Gas Economy Sweepstakes

Number Declined to Enter Contest on Ground That Fuel Question Is Not So Important as Formerly

LOS ANGELES, June 15.—In the Ninth Annual Los Angeles-Camp Curry, Yosemite Valley Gasoline Economy Run the Rollin won first place in its class and captured the sweepstakes as well with an average of 27.43 miles per gallon for the distance of 359 miles. This was the first contest in which the Rollin has competed.

Twelve cars left Los Angeles for the Valley and all but one finished. The Overland was disqualified for late arrival at the first night control, which was Fresno.

Although entries in the event are restricted to those cars represented by members of the Los Angeles Motor Car Dealers Association fewer dealers than has been the custom participated. The fact a larger number did not enter cars is explained by the claim that gasoline economy is not as important an item in connection with the purchase of automobiles now as it has been in previous years.

This year for the first time the run was conducted under official sanction of the A. A. A. and the cars were subjected to thorough scrutiny to determine that they were of stock production in every detail before the winners were announced.

Although it had been termed a stock car event in the past dealers have been known to alter their cars mechanically by using non-stock pistons, carburetors and other devices that tended to cut down gasoline consumption. Good weather and road conditions aided this year in the performance of the competitors.

An Oakland sedan won in the closed car group and took second place in the sweepstakes. Roamer was third in the sweepstakes. Gardner and Stearns Knight won in their respective classes. The showing of the Pierce Arrow with 17.78 miles per gallon was one of the surprises of the run.

The following summary of the results was certified by A. A. A. officials:

SUMMARY OF RUN

Class Places	Weight	Gal Gas	Pints Oil	Pints Water	Gas M.P.G.	Ton Miles	Sweeps	Sweeps Places
1-A								
Rollin	3440	13 1/8	2	2	27.43	47.18	45.35	First
Star Coach	2850	12 7/8	1	4	27.96	39.84	38.45	
Gray	2860	13 1/4	1	5 1/2	27.17	38.85	37.27	
Star Touring	2710	13 5/8	3	1/2	26.42	35.18	33.52	
*Overland								
2-A								
Oakland	3840	15 1/4	1	4 1/2	22.86	43.88	43.31	
3-A								
Roamer	3710	15 1/2	..	1	23.23	43.08	42.95	Second Third
4-A								
Gardner	4650	20 1/4	1/4	..	17.78	40.83	40.73	
Duesenberg	4890	24 1/8	2	28	14.62	35.74	32.66	
5-A								
Stearns Knight	5410	21 1/8	5	12 1/2	16.46	44.47	41.09	
McFarland	5130	23 1/8	..	5	15.08	38.68	38.26	
Pierce-Arrow	4260	20 1/4	..	3	17.78	37.86	37.57	

*Disqualified for late arrival first night control.

Bell, the Belflex inventor, to establish priority rights on the patent on fabric tension shackles, the Court of Appeals at Washington, D. C., has handed down a decision in favor of the Belflex Corp., New York. This decision affirms that of the Commissioner of Patents.

In the decision, written by Associate Justice Robb, the invention is described as "a suspension link of flexible, inelastic non-metallic material used in connecting the springs of automobiles to the frame."

HEAVY SELDEN SHIPMENTS

ROCHESTER, June 13.—The Selden Truck Corporation announces that shipments up to June 1, 1925 were 70 per cent greater than for the same period in 1924. May shipments were 34 per cent greater than in 1924.

Paige-Detroit Output in May Exceeds Highest Month of Past

DETROIT, June 16.—Three new production records were set last month by the Paige-Motor Car Company, as a result of demand by buyers for immediate delivery, factory officials say.

The largest single day production record was established, the last working day of May when 403 Paige and Jewett cars were produced. Previously, 335 cars had been shipped on May 14, exceeding by five the largest previous daily output of 330 made March 7, 1924.

May production totaled 5,841 which was 169 better than the previous monthly record set in March of last year. While a substantial share of this production is made up of the new Jewett coaches, all Paige and Jewett models are reported to be meeting with a heavy buyer demand.

A. R. Kroh on Tour in Ohio Urges Sound Merchandising

N. A. D. A. Representatives Stirs Buckeye Tradesmen With Talk on "Automobile Horse Sense"

CLEVELAND, O., June 15.—Automobile tradesmen of Ohio are having a great merchandising opportunity presented to them by A. R. Kroh, of the sales promotion staff of the National Automobile Dealers Association according to advices received here from Ohio dealers who have expressed their enthusiasm for the message of the N. A. D. A. worker. Mr. Kroh has been scheduled by the N. A. D. A. to hold 60 meetings in Ohio finishing July 25.

"Automobile Horse Sense," the subject of his talk, is the greatest exposition of good automobile merchandising practice ever heard by automobile dealers, is the way that D. Harry Johnson of Wooster, president of the Wayne County Auto Trade Association sums it up.

Kroh's Ohio Schedule

Mr. Kroh's June schedule in Ohio is as follows:

Wapakoneta, O., June 15, Monday noon; St. Mary's, O., June 15, Monday night.

Celina, O., June 16, Tuesday noon; Greenville, O., June 16, Tuesday night.

Sidney, O., June 17, Wednesday noon; Piqua, O., June 17, Wednesday night.

Troy, O., June 18, Thursday noon; Urbana, O., June 18, Thursday night.

Delaware, O., June 19, Friday night; Newark, O., June 19, Friday night.

London, O., June 22, Monday noon; Xenia, O., June 22, Monday night.

Jamestown, O., June 23, Tuesday noon; Washington Court House, O., June 23, Tuesday night.

Wilmington, O., June 24, Wednesday noon; Hillsboro, O., June 24, Wednesday night.

Waverly, O., June 25, Thursday noon; Chillicothe, O., June 25, Thursday night.

Circleville, O., June 26, Friday noon; Lancaster, O., June 26, Friday night.

New Lexington, O., June 29, Monday noon; Logan, O., June 29, Monday night.

Athens, O., June 30, Tuesday noon; Gallipolis, O., June 30, Tuesday night.

Many New Dealers Signed in May to Sell Hupmobiles

DETROIT, June 16.—New dealers appointed by Hupp Motor Car Corporation during May are as follows:

F. K. Chaffee, Pittsfield, Mass.; Sanders' Garage, Fredonia, N. Y.; Paul Hathaway, North Manchester, Ind.; Otto W. Ernst, Medora, Ind.; Uhl C. Bennett, Cameron, Mo.; The Mauis-Omans Motor Co., Springfield, Mo.; C. F. Green, Trenton, Mo.; Coast Motor Co., Gulfport, Miss.; Skrupky Auto Co., Cameron, Wis.; Evans Motor Co., Grand Forks, N. D.; A. L. Struthers, Marshall, Minn.; Chartier's Garage, Granby, Quebec; Magee Motor Co., Bogalusa, La.; B. & B. Garage, Hobart, Okla.; A. O. Birnie, Boydton, Va.; F. W. Eggers, Jr., Hermann, Mo.

Rose-Bolster Co., Olympia, Wash.; Ilion Motor Car Co., Ilion, N. Y.; Geo. H. Spink, Rome, N. Y.; Edward R. Hawkins, Syracuse, N. Y.; Ridgeway Sales & Service, Chicago, Ill.; North End Garage, Capac, Mich.; John W. Harris, Dearborn, Mich.; Burr Hardware Co., Rochester, Mich.; Fulker Machine Co., Royal Oak, Mich.; O. H. Stecker, Wayne, Mich.; E. M. Steffe, Ypsilanti, Mich.; J. F. Urschel, Tippecanoe, Ind.; Bert C. Laurimore, Spencer, Ind.; Jones Motor Co., Russellville, Ark.; Cannon-Ball Motor Co., Lexington, Ky.; Kraetz Motor Co., Milwaukee, Ky.; Walter

Sells 31 Cars in Single Month

JACKSONVILLE, Fla., June 16.—One of the best records made by an individual salesman of any dealer firm in the South is reported by the Margels-Kirby Co. of Jacksonville, Fla., distributors of the Maxwell and Chrysler line, officials of this company advising that A. E. Austin, a member of the retail sales force, personally sold 31 cars during a one month period recently.

As a reward for this unusual record Mr. Austin has been made assistant retail sales manager by officials of the company.

Isaak, Eureka, S. D.; E. D. Berridge & Son, Leola, S. D.

H. B. Sundt, Rockford, Minn.; Joplin & Beasley, Cairo, Ill.; The Meadows Motor Co., Poplar Bluff, Mo.; Ross S. Wood, Lacoan, N. Y.; Fred J. Williams, Sarasota, Fla.; Frank McCullough, Rantoul, Ill.; Chas. Abbott Motor Co., Pensacola, Fla.; E. M. Hargis, Nampa, Idaho; H. Klausman, Wadena, Minn.; J. F. & M. M. Stein, Asbury Park, N. J.; Eagle Garage, Kingston, N. Y.; C. G. Patmon & Co., Stockton, Cal.; Waggoner & Huffman, Keyser, W. Va.; Bullock & Craig, Sioux Falls, S. D.; Mohen & Amidon Sales Corp., Hartford, Conn.; Louis Winn, Globe, Ariz.

W. A. Lefleur, Madison, Neb.; Fuller Col Motor Co., San Jose, Cal.; McAnnich & Blomster, Swan City, Iowa; John Fauntroy Motors, Inc., East Orange, N. J.; J. F. Gunthorpe, Plainview, Neb.; Depot Garage, Hollister, Cal.; Main Street Garage, Marcellus, Ill.; Hanson Motor Co., Winnetka, Ill.; Truitt Bros. Motor Co., Kirksville, Mo.; F. B. Farow, Tuscon, Ariz.; Fred Emmett, Marysville, Cal.; Calkins-Burseth Motor Co., Fargo, N. D.; The R. T.-R. Motor Co., Jamestown, N. D.; Domac Motor Co., McAlester, Okla.; K. Hammond Motor Co., Madison, Ill.

REGISTRATIONS ARE HEAVY

MINNEAPOLIS, June 15.—Registrations of motor vehicles in Minnesota have already passed the total for 1924. Secretary of State Mike Holm, the registrar, puts total receipts for the year probably at \$9,000,000. Already 510,061 registrations have been made, receipts \$103,844 beyond the final figure of 1924, covering 399 more individual registrations than last year. Average tax per car last year was \$16.95 up to May 25. This year it is \$17.05.

RECORD PRODUCTION SCHEDULE

KOKOMO, Ind., June 16.—The Kokomo Automotive Mfg. Co., of this city, is in the heaviest production schedule of its history, with orders coming from manufacturers, jobbers, dealers and for export that indicate a marked improvement. The mirror department is now operating at a rate of 1,000,000 mirrors annually.

EXECUTIVE'S MOTHER DIES

ROCHESTER, N. Y., June 15.—Mrs. Etta Whitbeck, mother of J. V. Whitbeck, president of the Cleveland Automobile Co., Cleveland, Ohio, died recently at her home in Wolcott, near here. Mrs. Whitbeck was 74 years old.

Low Ford Down Payment in Detroit Boosts Car Sales

New Vehicle Business for Entire Trade in Motor Capital Reaches Record in May

DETROIT, June 8.—Sales of new cars in Detroit in May reached the record total of 11,246, comparing with 8,792 in April, and 8,607 in May last year. Closed car deliveries were 6,827 to 4,419; open truck deliveries for the month were 674, thirty under the April total and 8 under the total in May last year.

Ford car deliveries during the month totaled 6,158, or 55 per cent of the total business for the month. The Ford business represents a gain of 2,000 over April and is ascribed in large part as due to the low down payment plan. Ford truck deliveries were 360 or 53 per cent of the total.

Sales of all low priced cars made up 66 per cent of the month's total business. Cars in the \$1,000 price class and under took 80 per cent. Ford business in May last year was 53 per cent of the total. Low priced cars including Ford had 67 per cent of the total and cars in the \$1,000 class and under had 77 per cent. Medium priced cars sold 17 per cent of the May total this year and 18 per cent of the total in May last. The high priced car total was 3 per cent this year as against 5 last.

Oakland Co. to Supply Repair Parts for Scripps-Booths

DETROIT, June 15.—The Oakland Motor Car Company has taken over the repair parts stock of the former Scripps-Booth division of General Motors, and is now prepared to supply parts for this car through the Oakland dealer organization.

It is estimated that there are approximately 22,000 Scripps-Booth cars still in service, the owners of which will now have access to a convenient and reliable source of supply for repair parts.

Arrangements have been made whereby service stations and garages who may do repair work on Scripps-Booth cars to secure the necessary parts from the nearest Oakland dealer at a minimum loss of time.

TO DIRECT FLINT SALES

FLINT, Mich., June 15.—Announcement is made of the appointment of W. O. Crabtree as general sales manager of the Flint Motor Company, succeeding F. E. Witt, recently resigned.

Prior to his appointment Mr. Crabtree was identified with the sales activities of the Durant organization, in special work for Mr. W. C. Durant. Previous to his first becoming associated with the Durant interests he was engaged for a number of years in the automotive merchandising field, part of the time as distributor of both passenger cars and trucks.

Apperson Reductions Bring List to Lowest in History

Kokomo Factory's Second Cut Since First of Year Ranges From \$200 to \$555

KOKOMO, IND., June 15.—Price reductions, made for the second time since Jan. 1 by the Apperson Automobile Co., bring the cost of Apperson cars to the lowest level in the history of that organization. This second cut, which is effective June 15, causes reductions from the Jan. 1 list to range from \$200 to \$555 and affects all models both on six and eight-cylinder chassis. Stimulated sales are mainly responsible for the lowered prices, according to Apperson officials. Factory production schedules have been stepped up several times since the first of the year.

Following is the new list price, as compared to that of January 1:

Sixes	January 1	New Prices	Reduction
Plain Phaeton.....*	\$1,575		
Sport Phaeton.....	1,850	1,650	\$200
Brougham.....	2,350	2,050	300
Coupe.....	2,350	2,050	300
Sedan.....	2,395	2,100	295
Eights			
Phaeton.....	2,550	1,995	555
Brougham.....	2,800	2,450	350
Coupe.....	2,800	2,450	350
Sedan.....	2,850	2,595	255

*Not then in production.

Application of Pyroxlin Finishes

(Continued from page 13)

lose enamels are supplied requires reducing of approximately 50 per cent with the recommended thinner for the particular material being used. This applies to the first and second coats where a three-coat job is to be turned out, or if only two coats, the first coat should be thinned in that proportion.

First Coat Sprayed On

The first of the finishing coats is then sprayed on, making sure that all edges and mouldings are thoroughly coated first to prevent rubbing through. Then the panels and sides are sprayed, covering them uniformly—here it is very important that the operator has perfect control of the air brush in order to obtain perfect coating. Excellent lighting facilities should be provided, as coating with poor light is wasteful and invariably produces uneven finishes.

Many owners of automobiles still seem to want the high luster, procurable with a finishing varnish and it is advantageous, of course, to be able to apply varnish over proxylin enamels in such cases.

Where a varnish is desired the nitro-cellulose system is applied in the usual way. If the work has been properly done in bringing up the various nitro-cellulose

coats, the final surface will be found to be so smooth as to require only a "clean-up rub" with water. For this a rubbing felt and water only is used. The first coat of varnish may be applied 24 hours after the application of the final enamel coat.

If the surface requires a pumice stone rub, it should be done in the same manner when rubbing a good color or rubbing varnish. If the corners, edges or moldings are rubbed through, they can be touched up with properly thinned enamel, using either a striping pencil or a touchup gun.

Special Clear Lacquer

Where the final finish is to be polished lacquer, a special clear lacquer for polishing is mixed with the final coat or coats. In all other respects this system is the same with that intended to be left as sprayed. The finished body should be allowed to dry over night at room temperature in order that the final coat may become sufficiently hard to attain a high luster when polished. The harder the final coat is allowed to get the easier and quicker will be the polishing operation and the smoother the gun glaze is surfaced the more perfect will be the enamel and the better the final polish.

One of the worst enemies of any nitro-cellulose is oil and grease. Wherever these exist lacquer coats will not dry or adhere to the metal or undercoats. Hence, it is sometimes not desirable to try to paint the chassis parts, such as springs, axles, frame, etc., with nitro-cellulose materials. There are chassis finishing enamels on the market of the waterproof varnish type, safe to use on chassis parts, and for the relatively inexperienced, it is safer to use these than the nitro-cellulose materials. However, it is perfectly possible to use lacquers on chassis parts, depending principally on how good a job is done of cleaning the chassis previously. This will be gone into detail in succeeding articles.

Reo Announces New Heavy Duty Speed Wagon at \$1985

LANSING, MICH., June 13.—A new heavy duty speed wagon designed to handle loads approximating two tons and listing at \$1,985 for the chassis has been announced by the Reo Motor Car Co.

It is powered with a six-cylinder, fifty brake horse-power engine of 3 3/16" by 5" bore and stroke. A multiple dry disk clutch of 13 plates with a three-speed transmission is used, the latter mounted in a sub-frame amidships, transmits power through a metal and a fabric universal joint to the semi-floating spiral bevel rear axle, the gear ratio being 5.7 to 1.

Tires are 32" by 6" front and 34" by 7", rear, mounted on Budd steel disk wheels and semi-elliptic springs, the rear springs being underslung and provided with a rebound plate. The wheelbase of the heavy duty model is 156 inches and the total weight of the chassis 3,900 lbs.

High Output Well Into Last Half Expected by R. H. Grant

Chevrolet Sales Chief Sees Steady, Uniform Demand for Automobiles Throughout Country

NEW YORK, June 15.—After studying conditions for three months in more than half the States, R. H. Grant, sales manager of the Chevrolet Motor Company, expresses the conviction that high automotive production will continue well through the second half of 1925.

Sales peaks and depressions of former years are beginning to flatten out, he finds, and the automobile has become a year-round product, particularly since the closed car came into such favor.

Seasonal variations in demand are less marked. Sales throughout the country reveals steady and uniform demand and no one section predominates as a present or prospective market.

Mr. Grant expects demand will increase slightly soon and hold unchanged for some time at a comparatively high level, but he thinks this possibility will have only slight effect on production, especially among the large companies. Recent production of more popular cars has not met the demand, he says, and thus steady production is assured by an accumulation of unfilled orders—a guarantee against abrupt production variations and a benefit to dealers because it permits rapid turnover of capital by immediate delivery of cars.

Black & Decker Make Awards To Window Contest Winners

BALTIMORE, June 15.—Sixteen automotive merchants have been awarded cash prizes as winners in the Black & Decker National Window Trimming Contest, which was staged the week of April 20. First prize of \$100 went to J. C. Shumway of the Kansas City Automobile Supply Co., Kansas City, Mo.

Other prizes were awarded as follows: second prize, \$75, H. J. Weisberg, Oneida Auto Supply Co., Syracuse, N. Y.; third prize, \$50 each, (tie) William C. Uhler, E. S. Youse Co., Inc., Reading, Pa., and Frank E. Patterson, Motorcar Service Co., Wilmington, Del.; fourth prize, \$25, R. C. Beller, Straus-Frank Co., San Antonio, Tex.; fifth prize, \$15, Howard J. Harvey, A. Harvey's Sons Mfg. Co., Detroit, Mich.; ten other prizes, \$10 each; J. A. Thomas, Cameron & Barkley Co., Charleston, S. C.; Fisher O. Stark, Ferris Dunlap Auto Supply Co., Dallas, Tex.; Scott Betts, Illinois Electrical Co., Los Angeles, Calif.; S. E. Trinkle, The Stambaugh-Thompson Co., Youngstown, O.; F. E. Greble, G. W. Hubbard Hdwe. Co., Flint, Mich.; P. Murray, Southern Motor Supply Co., Oklahoma City, Okla.; Newton G. Strong, Philadelphia Motor Accessories Co., Philadelphia, Pa.; G. H. Whalen, Honeyman Hdwe. Co., Portland, Ore.; Wm. G. Blum, Losey & Co., Inc., Easton, Pa.; R. M. Faistl, Justus & Parker Co., Columbus, O.

Gray Motor Headed by Howe, British Transportation Expert

Corporation Plans Expansion Program—Obtains American Manufacturing Rights for Foreign Bus

DETROIT, June 15.—Election of Ernest M. Howe, British transportation expert, as president of the Gray Motor Corporation was announced following a meeting of the new Gray board of directors.

Arrangements have been completed it was state that call for an extensive financing program which will make available for the operation and expansion of the company an amount in excess of \$1,000,000. The program has yet to be ratified by the stockholders.

Other officers elected are Henry W. Burritt, vice-president and treasurer, and B. M. Schultz, secretary. The board of directors include Paul Gray, O. J. Mulford, Fred J. Robinson, Frank Beall, Henry W. Burritt, Ernest M. Howe, Hobart B. Hoyt, David A. Brown, all of Detroit, Benjamin S. Hanchett of Grand Rapids, Mich., Charles P. Norcross, and Henry Melville both of New York.

Get Bus Making Rights

Announcement was also made that the corporation had obtained exclusive manufacturing rights in this country for the Tilling-Stevens Corporation, makers of the Tilling-Stevens Gas and Electric Bus. The bus will be an American vehicle throughout, excepting the electrical equipment. It will have an American made axle, frame, body and will be representative throughout of the designing ability of local automotive engineers.

Manufacture of the bus will be of secondary importance, it was stated by Mr. Howe. A program of rigid economy will be adhered to for the time being after which Gray production will be put on a large scale basis.

Present bus production plans call forth manufacture of 1,000 buses between now and June, 1926. These will retail at between \$10,000,000 and \$11,000,000 and will be both single and double deckers. Orders have been placed for 700 and need but the delivery date to be confirmed.

Arrangements have been made with the Girard Trust Company of Philadelphia to help finance bus sales under the Trust Equipment Certificate plan. This will enable purchasers to buy busses for 30 per cent down, the remainder to be paid within five years.

WOULD JAIL DRUNKEN DRIVERS

WASHINGTON, June 15.—Jail sentences for automobilists convicted of driving while drunk were urged here by Chief Magistrate William MacAdoo of New York when he opened a meeting of the Committee on Enforcement of the National Conference on Street and Highway Safety. He advocated heavy fines for all traffic violators and that authority be given judges to suspend or revoke auto licenses.

Toledo Employment Now Stabilized

TOLEDO, June 13.—Employment in Toledo automotive plants has stabilized itself within the last few weeks at a point which is the highest since the summer of 1923.

Twenty-eight thousand men are employed in 51 plants located here, according to the Merchants & Manufacturers' Association. Some of the local automotive plants have put on extra shifts but it is anticipated that conditions will remain as they are for some weeks.

Rubber Manufacturers Will Use More Reclaimed Rubber

WASHINGTON, June 15.—Rubber manufacturers encountering a sharp increase in the price of raw material, are preparing to increase the proportion of reclaimed rubber in their products.

Representatives of the trade have been in conference with Secretary Hoover on the general question of rubber supply, and it is expected further conferences among the manufacturers will be held.

"Three members of the Rubber Association, which represents the majority of American consumers, called upon me recently," says Secretary Hoover. "They discussed generally the burden thrust upon the American consumer by the 100 per cent rise in prices of imported crude rubber. No conclusions were arrived at.

"One thing seems evident, that is, that the high price makes profitable the chemical reclamation of much larger amounts of used rubber for reuse and previous experience indicates that our domestic consumption can be supplied up to 40 per cent from this course, instead of about 20 per cent, which maintains when new rubber is below 35 cents per pound."

52,853 Chevrolet Cars, Trucks Were Produced During May

DETROIT, June 16.—Chevrolet May production totaling 52,853 motor cars and trucks was the second highest production month in the history of the company, displacing April by 617 cars and trucks. Of this above number, 42,783 units were for domestic sale and 10,070 for Canada and export trade.

Retail sales during the past month were 48,176, making it the fourth largest delivery month in the history of the company. April of this year was the largest month, exceeding May by 5,107 sales.

Unfilled orders on Chevrolet books at the end of April totaled 36,512 as compared to 30,709 at the end of May.

May Sets New Mark in Sales And Output for Nash Motors

Kenosha Organization, Hitting Record Stride, Expects Second Half Year to Be Best

KENOSHA, WIS., June 15.—Nash Motors Company announces that May Nash sales and production were the greatest ever attained in a single month since the founding of the company and surpassed the figure set in May, 1924, by 187 per cent. In speaking of this new record E. H. McCarty, Nash general sales manager, said:

"The new high mark set by May is of interest in another way too, as it was the fifth month since Oct. 1, 1924 to break all previous records for a month's business."

"Also May was the ninth consecutive month to surpass the highest total on our books for any previous similar month in the history of Nash Motors. And an analysis of the increases shown month by month during the nine-month period ending May 31 reveals the further fact that the average monthly gain to date over and above the same nine-month period of a year previous is 68 per cent." There is every reason to believe the second six months of 1925 will exceed the first half year in Nash sales, said Mr. McCarty.

TO HOLD CRIME CONFERENCE

VICTORIA, B. C., June 15.—Drastic changes in regulations for drivers of motor cars will be recommended during the Auto Crime Conference in Victoria July 20-25, and efforts will be made to secure uniform regulations on both sides of the line for western American states and Canadian provinces. The conference will be attended by judges of the Circuit and Supreme Courts, sheriffs, prosecuting attorneys and chiefs of police for nine states of the Union and three western Canadian provinces.

NAMED RETAIL SALES MANAGER

BUFFALO, June 13.—Louis Engel, Jr., of Buffalo, distributor of the Oldsmobile car in Western New York, announces the appointment of Gustave C. Miller as retail sales manager. Mr. Miller was deputy secretary of state in charge of auto registration in Buffalo. He has been identified with the local auto trade there since 1905. He was associated with the Cadillac agency in that city a number of years.

CLEVELAND ADDS DEALERS

CLEVELAND, June 15.—New members of the Cleveland organization are: C. and S. Motor Sales, Cicero, Ill.; Keystone Cleveland Co., So. Philadelphia, Pa.; Hamilton Motor Sales Co., W. Philadelphia, Pa.; Hutchinson Cleve. Motor Co., Hutchinson, Kan.; Hunt Motor Sales Co., Warren, O.; Ridge Motor Corp., Brooklyn, N. Y.; Peter Kilment's Garage, Wilkinsburg, Pa.; Richards Motor Car Co., Grand Rapids, Mich.; D. and P. Motor Car Co., New Rochelle, N. Y.; Somerville Motor Mart, Inc., Somerville, Mass.



Along Automobile Row



ST. LOUIS, Mo.—District offices of the Chrysler-Maxwell Motor Corporation have been moved from the Ohio Building at Vandeventer Avenue and Olive Street to the Rialto Theater building at Grand Boulevard and Olive Street. T. R. Harrington, district supervisor, is in charge of the offices. The district covers eastern Missouri, southwestern Illinois, western Tennessee, the larger part of Arkansas, northern Mississippi and parts of Oklahoma and Kentucky.

CORPUS CHRISTI, Tex.—The Corpus Christi Overland Company has been licensed to do business. The capital stock of the company is \$12,000. Among the incorporators are F. W. Jaeggli; Mrs. E. J. Jaeggli and A. M. Harned.

ROCHESTER, N. Y.—After an absence of nearly a year, G. Ray MacCollum, former Star and Durant distributor here, has reentered the automobile business. He has opened up a well appointed showroom at 184 Franklin Street and is handling Chrysler.

ATLANTA, Ga.—The Perfection Battery & Light Co. of Atlanta, one of the southeast's largest manufacturers of storage batteries for automobiles, announces a new plant at 182 Spring Street, offering larger quarters which will enable an increase in production.

PEORIA, Ill.—H. A. Frederick of the H. W. F. Sales Company, Peoria, has taken the Davis agency for the Peoria territory.

HOUSTON, Tex.—R. C. Scott, has been named sales manager for the J. C. Scott Company, Gray distributors in the Houston district.

DALLAS.—The first Dallas showing of the new Ajax Six will be in July according to F. E. McLarty, president of the Nash McLarty Motor Company, Nash distributors. Mr. McLarty has just returned from the factory in Wisconsin. The showing at Dallas will be preceded with an intensive advertising campaign.

ATLANTA, Ga.—The Atlanta branch of Olds Motor Works announces appointment of the F. S. Bright Co., 264 Peachtree Street, Atlanta, as distributors of the Oldsmobile in Atlanta territory.

SALT LAKE CITY.—Frank Botterill of the Botterill Automobile Co., of this city, wife and family will leave at an early date on a visit to England, Mr. Botterill's birthplace.

PHILADELPHIA.—On the fifth birthday anniversary of the Philadelphia-Nash Motor Co., June 1, Jo G. Roberts, president, announced change of the company's name to the Roberts-Nash Motor Company. This Philadelphia distributor of Nash cars at 1237-1239 North Broad Street, now has 150 dealers.

KNOXVILLE, Tenn.—The Tire Co. of Knoxville, distributor in the Knoxville territory of the Firestone line, moved recently to its new building on North Gay Street.

BLOOMINGTON, Ill.—H. C. Johnson and W. G. Hennebry, 110 South Madison Street, Bloomington, Ill., have taken the Oldsmobile agency for Bloomington.

NEW ORLEANS, La.—The Motor Sales & Service Company, distributors of Maxwell and Chrysler cars, has appointed the following dealers: Watson-Ledet Motors, Baton Rouge, La.; James J. Price, Jr., Lake Charles, La.; Wilson-Delmon, Alexandria, La.

DALLAS.—The Flint Motor Company, Flint distributors, has moved into its new three-story and basement building at Commerce and Preston Streets. The company now has plenty of room to display all models. Irving Kuffeit is manager of the Dallas house.

TOLEDO.—The Body-Parrish Co., capitalized at \$10,000 has taken over the distribution of Paige, Jewett and Kissel motor cars in the Toledo territory. The new corporation is taking over the business formerly conducted by George F. Parrish

and Irving Jackman of the Paige-Oslo Co., and will use the same sales and service quarters at 1214-1220 Madison Avenue. The old corporation will liquidate.

CHICAGO.—A new branch office at 5657 Broadway has been opened by Stewart-Warner Speedometer Corporation to accommodate automobile owners of the north side district. This is the third service station the company has opened in Chicago. At the new branch the entire Stewart-Warner line will be sold and serviced.

CINCINNATI.—The Gilbert Chevrolet Sales Company has taken possession of its new home on Gilbert Avenue, Cincinnati, the company acquiring the two-story building formerly occupied by H. H. Harig & Company, Marmon dealers. For a number of years the former concern was housed in a structure on upper Gilbert Avenue, near Peebles Corner. Increased demands have made a larger home necessary, according to Ford Vazey, manager of the company. The company's old building will be retained as a used car department.

ATLANTA, Ga.—The Withers & Chapman Co., tire and accessory jobbers of Atlanta has opened a branch plant at 429 Peachtree Street, with W. A. Satterwhite in charge as manager.

ATLANTA, Ga.—Recent new dealer firms in the South include the following: Southern Sales Co., Oklahoma City, Okla.; Winn-Duffner Motor Co., Oklahoma City, Okla.; Moore-Patterson Motor Co., Lakeland, Fla.; Alford-Gwynn Motor Co., Tallahassee, Fla.; C. E. Smith Motor Co., Centre, Ala.; Swift Motor Co., Durham, N. C.; Mannford Motor Co., Mannford, Okla.; Mebane Motor Co., Mebane, N. C.; Knox-Gaines Motor Co., Columbia, S. C.; Smith Motor Co., Collins, Miss.

LOS ANGELES.—Herbert von K. Duval, who has been connected with the sales department of Don Lee, Los Angeles, California Cadillac distributor, has been appointed manager of the Bay District Motors at Santa Monica, Cal., Cadillac and Oldsmobile dealers.

CLEVELAND, O.—The Raybestos Brake Service Co., has been incorporated with a \$15,000 capital to reline and adjust brakes on all makes of cars. W. E. Washburn, Jr., C. A. Beach, Harvey H. Bodym, Howard E. Chapel and W. Stiles Koones are the incorporators.

MILWAUKEE.—The Baumgartner-Stein Nash Sales & Service Co., Milwaukee, has appointed community dealer in Nash and Ajax by the Nash Sales Co., and opened headquarters at Twenty-fifth and State Streets, Milwaukee. Henry Baumgartner was associated with the Jeffery and later the Nash distributing organization in Milwaukee for 17 years, and Edward Stein for a somewhat shorter period.

SPRINGFIELD, Mass.—H. A. Hannum, manager of the Sanford Street Garage, has been appointed Velie dealer and has the control of agencies in Hampden and Hampshire counties.

OSHKOSH.—The Gibson Tire Company is erecting a \$10,000 concrete garage and service department.

CHICAGO.—H. A. Wehmeler, vice-president and general manager of Community Motors, Inc., has announced three important changes in connection with his organization. M. W. Cunningham has been appointed manager of the wholesale department, A. M. Selby has been named manager of the Community Motors, Inc. branch at 2484 Milwaukee Avenue and W. M. Olson has returned to his old stand as manager of the branch at 6626 South Halsted Street.

ROCKINGHAM, N. C.—The Hudson-Essex Sales Co. has been recently chartered at Rockingham, N. C., with \$25,000 capital for the distribution of the Hudson and Essex line in a part of the North Carolina territory adjacent to Rockingham. R. R. Napier and H. S. Boggan are incorporators.

NEW ORLEANS, La.—Dee Regester has been appointed head of the maintenance department of the Gus D. Revol Cadillac Co. at St. Charles Avenue and St. Andrew Street.

MOLINE, Ill.—For the first time in many years the Studebaker Corporation has an agent in Moline. Announcement was recently made that J. A. Wynes of the Wynes Motor Service Company, has been appointed dealer for the Moline district.

MILWAUKEE.—A new sales and service agency for Buick in Milwaukee has been organized by George Breitbach. He also operates Buick agencies in West Allis and South Milwaukee.

CLEVELAND, O.—The Kissel-Cleveland Co., has been chartered with an authorized capital of \$10,000 to deal in automobiles, parts and accessories. Incorporators are Harold T. Moore, George A. Hurley, W. J. Mahon, J. V. Walsh and C. M. Burke.

FORT DODGE, Ia.—W. P. and H. C. Payne, formerly of Boone, Ia., and P. J. Tierney of Fort Dodge, Ia., have formed the Payne Auto Co. of Fort Dodge and will handle Studebaker cars. Location of the new firm will be at 813 First Avenue North.

LOS ANGELES.—A. C. Robbins, Jr., has been appointed service superintendent of the Greer-Robbins Company, Hupmobile and Chrysler distributors, Los Angeles, succeeding to the post made vacant by the death of S. H. Wray, who was recently killed in an automobile accident.

CHICAGO.—Harry N. Bush formerly connected with the Pellet Magneto Company, 2450 South Wabash Avenue, has resumed connection with that company as assistant to R. L. Putnam in the sales and service part of the business.

MILWAUKEE.—The Bell Motor Co. has succeeded the Teutonia Motor Car Co. of Milwaukee, and taken over its Paige and Jewett and Chevrolet franchises. Edward Uhl is president, and G. Harrison Bell, treasurer and sales manager. The sales and service headquarters are at 1130 Teutonia Avenue.

HARRISBURG, Ill.—W. F. Rogers, O. E. Rogers, and E. H. Rogers, have organized the Rogers Auto Supply Corporation and opened a distributing agency at 24 South Jackson Street. Capital stock has been fixed at \$40,000. It is proposed to distribute motor cars, supplies and accessories.

MINNEAPOLIS.—The Pioneer Rim & Wheel Co., Minneapolis, representing several wheel and rim corporations, has moved to 24 Tenth Street S., foot of Harmon Place.

HARTFORD, Conn.—Stanley L. Dennett, Maxwell and Chrysler dealer in East Hartford has begun work on a new sales and service station on the Connecticut Boulevard.

LOS ANGELES.—Russell Garage, at Inglewood, Cal., has been appointed a Willys-Knight and Overland dealer.

SIOUX CITY, Ia.—Announcement has been made by the J. V. Thorndyke Co., Sioux City, Ia., that M. E. Stevens has been made manager of the Ford department in Sioux City and Roy McKee manager of the Lincoln department. J. V. Thorndyke has taken personal charge of the branch at Omaha.

LOS ANGELES.—The Arnold Superbilt Car Company, exclusive Los Angeles used car concern which features reconditioned cars of the higher price class, recently took a long lease on a building at Tenth and Olive Streets, Los Angeles. The building will be renovated to afford larger display rooms. Max Arnold is president of the company.

DALLAS.—J. F. Rork, district manager for the Durant Motor Company at Dallas, called on the retailers in San Antonio, Waco, Austin, and several other places recently with a view of evolving plans for a more active selling campaign. He reported conditions encouraging.

With the Associations

To Wage War Tax Fight

NEW YORK, June 15.—Authorization of a vigorous campaign asking congress to remove the special war-time excise taxes on motor vehicles was voted by the National Automobile Chamber of Commerce meeting here.

The car and truck makers have addressed themselves to congress on this subject in the past, and some reductions have been made. The automobile industry believes, however, that with a probable \$400,000,000 surplus in the government receipts over expenditures, there is room for a complete removal of these levies, which have been recognized as a war-time emergency measure.

"We owe it to our customers to get these fees done away with," said H. H. Rice, Chairman of the Chamber Taxation Committee, addressing the meeting. "The factories have been making every effort to reduce the costs of transportation by selling cars at the lowest possible prices, yet no matter what we do in this direction, there still remains this Federal tax of 5 per cent on cars, 3 per cent on most classes of trucks, and 2½ per cent on repair parts. When these taxes are removed, there will be just that much saving to the pockets of our buyers."

Discuss Repair Service

ST. LOUIS, June 15.—John T. Salisbury, a director of the St. Louis Automobile Dealers' Association of the More Automobile Co., Marmon distributor here, was the principal speaker at the last monthly meeting of the Service Managers' Bureau of the St. Louis Automobile Dealers' Association. He told of the advantage to the dealer, the service manager and the car owner of better co-ordinated repair service.

W. H. Leininger of the Pierce Oil Corporation spoke of the relative merits of the various grades of oils.

David G. Nelson, president of the Nelson Motor Car Maintenance Co., told of the work his company performed for St. Louis automobile dealers in rendering night and holiday road service to their patrons.

Earl Neiderloh of the Eighteenth Street Garage Repair Shop explained the workings of the Wasson Motor Check and invited the service managers to witness a demonstration of the machine.

Heads Gas Retailers

DALLAS, Texas, June 15.—John E. Farr was elected president of the Retail Gasoline Dealers' Association at the annual meeting. Four vice-presidents elected were Bates Robertson, F. E. Shute, S. E. Taylor, J. N. Greene. C. W. Hayley was made executive secretary.

Tradesman Honored



H. E. Gilbert, treasurer of the Ohio Buick Co., Cleveland, who recently was elected president of the Cleveland Association of Credit Men

New Show Building

FORT WORTH, Texas, June 15.—The Fort Worth Automotive Trades Association is to have a show house twice the capacity of the present one when the annual spring show is staged in March, 1926.

That was decided when a committee of the Fat Stock Show Association decided to take the present automobile show building for other purposes. The committee decided the present show building is not large enough to meet automobile dealers' requirements for exhibitions and announced plans for a new structure.

The new building will be erected within the Fair Grounds and will be ready for the show March 6-16, 1926.

Ellis Boyd who has been re-elected head of Texas Automobile Dealers' Association



Discuss Show Plans

DALLAS, Texas, June 15.—Preliminary plans for the annual fall show of the Dallas Automotive Trades Association, to be held in connection with the State Fair of Texas in October, were discussed at a recent meeting of the automobile dealers. President Frank H. Stephenson of the association declared the dealers are determined to put on the most complete show ever staged in the Southwest.

Few plans were completed at the initial meeting. The dealers will meet soon and go into matters further.

Close on Sunday

TOLEDO, June 13.—Ninety per cent of the places of business of Toledo automotive dealers and wholesalers were closed last Sunday as a result of a new plan of Sunday closing sponsored by the Toledo Automotive Trade Association. Only a few dealers outside the organization kept their places open.

Emergency service and garage service was handled by the smaller garages in outlying sections of the city.

H. R. Henry, sales manager of Willys-Overland, Inc., was chairman of the committee of the automobile men which worked out the plan to give their employes "a day of rest, pleasure and recreation" on Sundays.

All dealers will continue to remain open evenings to 9 o'clock for convenience of the public.

Hyland Re-elected

ST. LOUIS, MO., June 15.—For the third successive year, Dan F. Hyland, head of the Stewart-Warner Products Company in St. Louis, was elected president of the Automotive Accessory Association of St. Louis at the annual meeting of that organization at the Claridge Hotel.

C. C. Schelp of the Frampton Co. was elected vice president and Robert E. Lee, secretary and treasurer for the 15th time.

The following directors were named: Stuart Campbell of the Campbell Iron Co., H. H. Fleer of Fleer-Petty Auto Accessories Co., Frank Quan of the Fred Campbell Auto Supply Co. and C. D. Wagner of the Beck and Corbitt Iron Co.

Issue Year Book

NEW YORK, June 15.—The Twenty-fifth Anniversary Year Book of the Rubber Association of America has just been issued from the offices of the association in New York. It has silvered covers and contains the complete roster of the association as well as the charter, constitution, by-laws and personnel of officers from the time of founding.

Prosperity of Industry Seen In Reports of Companies

Extra Dividends and Increased Sales Show Healthful Condition of Business

NEW YORK, June 12.—Extra dividends and increased sales are two of the signs indicating continued prosperity in the automotive industry.

With May business exceeding in the same month last year by 40 per cent, Reo Motor Car Company declared a quarterly dividend of 2 per cent and 1 per cent extra, payable July 1 to stock of record June 15. This was an increase of $\frac{1}{2}$ per cent in the quarterly dividend. Reo reported marked gains in motor bus business and the establishment of a sales connection with Calcutta.

Martin-Parry Corporation April sales exceeded \$600,000 with net profit of \$39,985. For the quarter ending March 31, sales were \$1,176,417 with net profits \$51,262, equal to 41 cents a share on the 125,000 shares of stock. Earnings at a rate substantially in excess of the \$4 annual dividend are indicated.

W. A. Fisher, president of Fisher Body Corporation, announces that the entire \$8,019,000 outstanding preferred stock of Fisher Body Ohio Co. will be retired October 1 at 110 and accumulated dividends. Holders can turn in stock after July 1 at the Banker Trust Company and receive payment at 110 plus dividends from July 1 to date of payment.

Fisher Body Ohio Company has declared the regular quarterly dividend of \$2 on the preferred, payable July 1 to stock of record June 15.

NEW AUBURN DEALERS

AUBURN, Ind., June 15.—Distributors and dealers recently signed by Auburn Automobile Company follow: Distributors: Combine Motor Corp., Rochester, N. Y.; Thede Motor Company, Peoria, Ill.

Dealers: Coburn Motor Co., Newcastle, Ind.; Auburn Motor Sales, Jamestown, N. Y.; O. C. Burton, 1588 Wooster Rd., Rocky River, Ohio; Louis Vaeth's Sons, 332 South West St., Syracuse, N. Y.; Fairmont Auburn Sales Co., Fairmont, W. Va.; Bennett Motor Sales Co., New Britain, Conn.; C. D. Hall, Inc., Pawcatuck, Conn.; Paul C. Booth, Meriden, Conn.; Butler Machine Co., Bridgeport, Conn.; James Piscitelli, Torrington, Conn.; Auburn Sales & Service, St. Johns, Mich.; John F. Newton, Flint, Mich.; Frank M. Foster, D. A. C. Garage, Detroit, Mich.; Theobold Motor Sales, Napoleon, Ohio; Sulham & Hackett, New Haven, Conn.; Dixie Highway Garage, Middletown, Ohio.

ON SUBSTANTIAL BASIS

OSHKOSH, Wis., June 13.—The Oshkosh Motor Truck Co., of Oshkosh, Wis., manufacturer of commercial vehicles employing a quadruple drive system of transmitting power to all wheels, is now on a substantial earning basis, according to reports presented to the stockholders at the annual meeting. The concern, in the first four months of 1925, alone did a business in excess of \$100,000, and prospects are for a sustained or greater volume during the remainder of the year.

Coming Motor Events

Automobile Shows

Boston	Oct. 10-17
	World's Rubber and Tropical Exposition.
Dallas, Tex.	Oct. 10-25
	Annual Automobile Show, State Fair Automobile Building, under the auspices of the Dallas Automotive Trade Association. J. W. Connell, manager.
De Pere, Wis.	Aug. 31-Sept. 21
	Annual Automobile Show under the auspices of the Automobile Division of the Green Bay Association of Commerce.
Fresno, Cal.	Sept. 28-Oct. 3
	Fresno Motor Car Dealers Association. Fifteenth Annual Show in connection with Fresno District Fair.
Grand Rapids, Mich.	Sept. 7-12
	Grand Rapids Automobile Dealers Association, Seventh Annual Show in connection with West Michigan Fair, Wm. T. Morrissey, manager.
Oklahoma City, Okla.	Sept. 26-Oct. 3
	Annual State Fair and Exposition. Passenger cars and accessories.
Sacramento, Cal.	Sept. 6-12
	Automobile Exhibits in Diamond Jubilee State Fair.
Shreveport, La.	Oct. 24-Nov. 8
	Twentieth Annual State Fair showing passenger cars, trucks and tractors.
Spokane, Wash.	June 16-17
	Sixth Annual Sportsmen and Tourist Fair.
Wheeling, W. Va.	Sept. 7-12
	Wheeling Automobile Dealers Association, Eleventh Annual State Fair, Exposition Building.
White River Junction, Vt.	Sept. 15-18
	Nineteenth Annual Twin State Fair. Passenger cars, trucks and accessories. F. L. Davis, manager.

Races

Altoona, Pa.	June 13
Altoona, Pa.	Sept. 7
Belgium	July 5
	European Grand Prix Race.
Charlotte, N. C.	Oct. 24
Fresno, Calif.	Sept. 30
Laurel, Md.	June 20
	A. A. A. Race, Baltimore-Washington Speedway.
Laurel, Md.	Oct. 10
	A. A. A. Race, Baltimore-Washington Speedway.
Los Angeles, Cal.	Nov. 26
Monza, Italy	Sept. 6
	Italian Grand Prix Race.
Paris Montlhery track	July 26
	French Grand Prix.

ADJUSTING FOR NEW PRICES

WASHINGTON, June 15.—Cable advices to the Automotive Division of the Department of Commerce state that the danger of reimposition of the McKenna duties prior to July 1 has practically disappeared and American importers are accepting duties and making adjustments for new prices.

Foreign Shows

Berlin, Germany	Nov. 26-Dec. 6
	Annual Automobile Show in the Kaiserdamm.

Buenos Aires, Argentina	Oct. 3-13
	Pan-American Road Congress.

London, England	Oct. 8-17
	Olympia Passenger Car Show.

London, England	Oct. 29-Nov. 7
	Annual Truck Show.

Conventions

Brussels, Belgium	June 21-26
	International Chamber of Commerce.

Buenos Aires, Argentine	Oct. 3-18
	Pan-American Road Congress.

Chicago	June 19
	Automotive Manufacturers' Association Meeting.

Cedar Point, O.	June 19-20
	Annual Convention Ohio State Auto Association.

Cleveland	Sept. 11-19
	Annual Convention and Exposition of American Society for Steel Treating.

Cleveland	Sept. 15-16
	S. A. E. production meeting and exhibition.

Colorado Springs, Colo.	June 22-27
	Summer Convention, Automotive Equipment Association, Bradmoor Hotel.

Des Moines, Ia.	Nov. 12-13
	Automotive Merchants' Association Convention.

Everett, Wash.	July
	Annual state convention Washington Automotive Trades Association.

Montreal, Que.	Oct. 7-10
	Fall convention of the Motor and Accessory Manufacturers Association.

Philadelphia	September
	S. A. E. Automotive Transportation meeting.

Pittsburgh, Pa.	Oct. 12-14
	Pennsylvania Automotive Association Convention.

Seattle, Wash.	June 24-26
	National Foreign Trade Council Convention.

St. Louis	Nov. 17-19
	Annual Convention of National Tire Dealers' Association.

Tuscaloosa, Ala.	July 20-21
	Midsummer meeting of the Alabama Automotive Trades Association.

White Sulphur Springs, W. Va.	June 15-19
	S. A. E. Summer Meeting.

Daimler, B. S. A., Vauxhall, Ariel and Colesley have all announced substantial reductions on different models and while no statement has been made by Morris and Rover, it is expected that their prices will be reduced very soon. The Morris and Austin factories are working double time with large production.

Murray Plans Expansion of Body Factory at Racine

Transfer of Hupp Business to Detroit Will Take Several Months Says Sheldon

RACINE, Wis., June 15.—Concerning the acquisition of the H. & M. Body Corp. of Racine, Wis., by the Murray Body Corp., Detroit, from the Hupp interests, Allan Sheldon, head of the Murray company, has made the following statement:

"At this time I can announce only the general plans for using the Racine plant. It is ideally located for serving the middle western automobile manufacturers quickly and economically. Its modern and complete equipment also makes it suitable for building bus bodies, a development of the automotive industries which is now only in its infancy. The work of transferring the Hupmobile business to Detroit will take several months, and after that more definite statements can be made.

"All of our plans look toward the development and expansion of the Racine plant."

The H. & M. Body Corp. plant originally was built by the old Mitchell Motor Car Co. Several years ago the Mitchell Motors Co., now defunct, disposed of a half interest to the Hupp Motor Car Co., which took over the entire interest during the Mitchell liquidation. Since that time the plant has been operated only part capacity, to supply closed body needs of Hupmobile. The Racine plant built only the bodies, which were shipped to Detroit for upholstering and finishing.

Much Interest Is Evidenced In Chicago Display of Ajax

CHICAGO, June 13.—The first showroom display of the new Ajax six was staged in Chicago last Sunday by the Chicago-Ajax Company. The new Nash-built motor car was accorded a fine reception, a check showing that a total of 3,725 persons inspected the Ajax between 8 o'clock and midnight on the day of the car's Chicago debut.

Large throngs have visited the Chicago-Ajax show room each day since the introduction. Sales are reported to have developed beyond expectations of the local dealers who are highly pleased with the public interest evidenced.

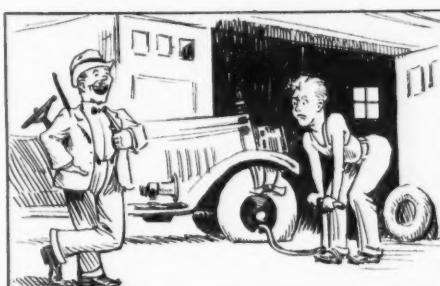
National distribution of the Ajax, it is stated, will be on a basis which will permit announcement to be made in city after city as fast as growing production makes it possible to follow introduction with deliveries. After metropolitan centers have been opened up other communities will receive shipments, company representatives announce.

LARGER CONTINENTAL PROFITS

NEW YORK, June 16.—Net profit of \$1,402,864 after depreciation, interest and

SQUEEKS AND RATTLES

ENOUGH IS A-PLENTY



Crawford: "How is it you never take your wife when you go motoring?"

Crabshaw: "That old car of mine can give me all the arguments I want."

—College Humor.

The Speed Trap

"Halt, there!" commanded Constable Sam T. Slackputter, the well-known guardian of the peace and dignity of Petunia. "Consider yourself under arrest for exceeding the speed limit."

"What's at!" returned the offending motorist. "How do you know how fast I was going? You didn't even glance at your watch."

"I don't need to. If I see you coming and turn my head away just as you pass the Methodist church corner, and then turn it back and you've reached the hay scales, I know you've reached the limit. You may say I can't tell time by my head, but I've been using it for 49 years now, and know just about what it can do."—Kansas City Star.

NOTHING IS IMPOSSIBLE

"George! what is the matter?"

"Well, darling, the instruction book says you can't go from high gear to reverse without entirely wrecking the car, but I did it!"

—Goblin.

federal taxes, equivalent to 79 cents a share on 1,760,845 shares of no par capital stock outstanding, is reported by the Continental Motors Corp. for the six months ending April 30. This compares with \$1,163,744, or 66 cents a share for the same period last year.

Overland Six Price Cut Is Followed by Increased Orders

TOLEDO, June 16.—Reduction of price in the Willys-Overland six, announced last week, has brought a flood of orders to the factory here and indications are that a high summer schedule will be maintained, according to President John Willys, in announcing a schedule of 250 of the sixes a day for the present.

Many dealers are unable to keep this model in stock on account of the big demand. This has brought heaviest demand for any one model in Overland history.

NOT FULLY EQUIPPED

The Butler: Sir, your car waits without.

Newlyrich: Send it back to the garage. I won't use a car that is without anything.

—College Humor.

WAS IT A COW?

While driving along in his car, an elderly man hit a coupe driven by a girl. The girl and her friend got out to survey the damage and then inspected the other car.

1st Girl (looking over the other car): Why it hasn't got a horn.

Man: Sorry, it's too young to have horns.

—Lafayette Lyre.

BRIGHT SCHOLAR

Examiner: What is ordinarily used as a conductor of electricity?

Pupil (thinking hard): Why, er-r-r-r—

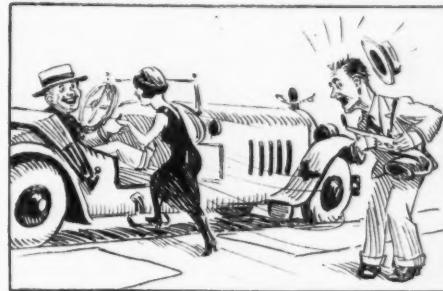
Examiner: Correct. Now tell me what is the unit of electric power?

Pupil: The what, sir?

Examiner: Very good! That will do.

—Exchange.

THE SIREN LURE



Whing: Did your girl come down when you serenaded her with your saxophone?

Ding: No—but some guy got her out with an auto horn.

—Ames Green Gander.

WILLYS ON COMMITTEE

WASHINGTON, June 16.—John N. Willys, president of the Willys Overland Company, is a member of a committee which met here to lay the groundwork for consideration of a national shipping policy by the National Merchant Marine Conference, which is being organized under the auspices of the Chamber of Commerce of the United States.

BUY MARVEL EQUIPMENT CO.

ROCHESTER, Pa., June 15.—The Guarantee Liquid Measure Co., manufacturer of the Fry Visible Pump, has purchased all the outstanding capital stock of the Marvel Equipment Co. of Cleveland, makers of lubricating grease pumps.

The Marvel Company will continue as a separate operating organization.

Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE. PRICE	SHIP. WT. PASS. BODY STYLE. PRICE	SHIP. WT. PASS. BODY STYLE. PRICE	SHIP. WT. PASS. BODY STYLE. PRICE
AJAX		CHANDLER (Cont'd)	
..... 5-p Touring \$865	3309 5-p Coach 1,595	3920 3-p Straight "8" \$6,850	HUDSON "Super Six"
..... 5-p Sedan 995	3309 5-p Chummy Sedan 2,045	3700 5-p Roadster 6,500	3425 7-p Phaeton \$1,250
ANDERSON "41"	3469 5-p Met. Sedan 2,195	3700 5-p Phaeton 6,850	3450 5-p Coach 1,250
2650 5-p Touring \$1,195	3428 5-p Sedan 4 d. 1,995	3920 7-p Phaeton 6,850	..... 4-p Brougham 4 d. 1,595
2675 4-p Sp. Touring 1,445	3521 7-p Sedan 2,195	3980 4-p Sp. Phaeton 6,850	3585 5-p Sedan 1,695
2925 2-p Coupe 1,425	3598 7-p Limousine 3,095	..... 4-p Coupe 7,500	3675 7-p Sedan 1,795
2875 5-p Sedan 1,695		..... 5-p Sedan 7,700	
2925 5-p Sp. Sedan 1,895		4350 7-p Sedan 8,300	
..... "50"			
2975 7-p Touring 1,595	CHEVROLET "Superior" (Series K)	DU PONT "D"	HUPMOBILE "R" 4
3200 7-p Sedan 1,945	1755 2-p Roadster \$525	3300 2-p Roadster \$2,600	2595 2-p Roadster \$1,225
APPERSON "6"	1870 5-p Touring 525	3550 5-p Touring 2,600	2745 5-p Touring 1,225
..... 5-p Phaeton \$1,575	2015 2-p Utility Coupe 715	3800 7-p Touring 2,750	2760 2-p Coupe 1,350
3100 5-p Sp. Phaeton 1,650	2110 5-p Coach 735	3550 5-p Touring Sedan 3,400	2895 5-p Club Sedan 1,375
3145 5-p Coupe 2,050	2220 5-p Sedan 825		
3470 5-p Sp. Sedan 2,100			
..... 5-p Brougham 2,050			
..... "ST 8"			
..... 5-p Sp. Phaeton 1,995	CHRYSLER (112½ in. W. B.)	DURANT A-22	JEWETT "23-25"
..... 3-p Coupe 2,450	2805 4-p Roadster \$1,625	2300 2-p Roadster \$1,080	3025 4-p Roadster \$1,795
3470 5-p Brougham 2,450	2730 5-p Touring 1,395	..... 2-p Sp. Roadster 900	3135 5-p Touring 1,795
..... 5-p Sedan 2,595	2785 5-p Phaeton 1,495	3225 5-p Touring 830	3295 4-p Coupe 2,095
AUBURN "4"	..... 5-p Coach 1,545	5-p Spec. Touring 950	3410 5-p Sedan 2,195
..... 5-p Touring \$795	2395 4-p Coupe 1,160		
..... "6-66"	..... 4-p Spec. Coupe 1,235		
..... 6-p Roadster 1,495	2935 4-p Brougham 1,895	..... 5-p Spec. Sedan 1,190	
..... 5-p Brougham 1,595	3060 5-p Sedan 1,825	2505 5-p Sedan 1,310	3015 5-p De Luxe Touring 1,320
..... 5-p Sedan 1,795	3085 5-p Imperial Sedan 2,065	2430 5-p Coach 1,050	2835 2-p Bus. Coupe 1,340
BARLEY "6" 6-50	3090 5-p Crown Sedan 2,195	..... 5-p Spec. Coach 1,100	3025 5-p Sedan 1,530
2750 5-p Touring \$1,395	3225 5-p Town Car 3,725	ELCAR "4-55"	3305 5-p De Luxe Sedan 1,780
2800 5-p Sp. Touring 1,495		..... 5-p Touring \$1,095	3000 5-p Coach 1,260
3100 5-p Sedan 1,850	2325 5-p Touring \$895	..... 5-p Coach 1,195	
3150 5-p Sp. Sedan 2,250	2580 5-p Sedan 1,195	..... 5-p Sedan 1,595	
BUICK "Standard"	..... "43"	"6-65"	
2750 2-p Roadster \$1,150	2750 5-p Touring 1,095	5-p Touring 1,295	3420 5-p Brougham 4 d. \$2,385
2920 5-p Touring 1,175	2810 5-p Touring De Luxe 1,195	..... 5-p Coach 1,395	3375 4-p Victoria 2,385
2960 2-p Coupe 1,375	2910 5-p Sp. Touring 1,295	..... 5-p Sedan 1,595	
3075 4-p Coupe 1,565	3000 5-p Coach 1,295	"8-80"	Series "A"
3185 5-p Dbl. Srv. Sedan 1,475	3040 5-p Sedan 1,495	3700 5-p Sp. Touring 2,165	3330 2-p Playboy Road. 2,575
3245 5-p Sedan 1,665	3190 5-p Sedan De Luxe 1,695	3000 7-p Sp. Touring 2,265	3340 5-p Touring 2,575
3050 5-p Coach 1,295	3190 5-p Sport 1,725	3000 3-p Coupe 2,315	3450 3-p Friendly "3" 2,875
(120 in. W. B.)	2990 5-p Brougham 1,545	4050 7-p Sedan 2,765	3625 5-p Brougham 2,875
3285 2-p Roadster 1,365		4000 5-p Brougham 2,865	3520 4-p Victoria 2,775
3465 5-p Touring 1,395	COLE "MASTER"		3525 5-p Sedan 2,975
3350 5-p Sedan 2,225	3675 4-p Volante Touring \$2,325	ESSEX	3470 7-p Sedan 3,325
3560 5-p Coach 1,495	3795 7-p West. Touring 2,325	2130 5-p Touring \$850	3800 7-p Suburban Sedan 3,375
(128 in. W. B.)	3675 4-p Aero-Vol. Tour. 2,475	2395 5-p Coach 850	KISSEL "55"
3485 3-p Sp. Roadster 1,750	4055 5-p Brouette Sedan 3,225	FLINT "55"	3130 2-p Speedster \$1,895
3550 5-p Sp. Touring 1,800	4000 7-p Royal Sedan 3,225	..... 4-p Sport Roadster \$1,950	..... 2-p Sp. d'ster De Luxe 2,185
3610 7-p Touring 1,625	4100 7-p Royal Limousine 3,325	3145 5-p Touring 1,595	..... 4-p Speedster 1,995
3745 3-p Country Club 2,075	CUNNINGHAM "V-6"	3310 4-p Sp. Touring 2,050	3530 2-p Sp. d'ster De Luxe 2,285
3770 4-p Coupe 2,125	4600 7-p Petite Coupe 4,500	3455 4-p Coupe 2,195	3295 2-p Enc. Speedster 2,285
3905 5-p Brougham Sedan 2,350	4500 4-p Sp. Touring 5,300	3585 5-p Sedan 2,285	3190 4-p Tourster 2,785
4030 7-p Limousine 2,525	4700 4-p Sedan 7,150	5000 6-p Brougham 4 d. 2,735	2980 5-p Phaeton 1,685
3995 7-p Sedan 2,425	5000 6-p Limousine 7,650	FORD "40"	3170 5-p Phaeton De L. 1,885
3850 7-p Town Car 2,925	DAGMAR "6-70"	2400 5-p Touring 1,285	..... 7-p Touring 1,785
CADILLAC "V-63 Standard Line"	3750 4-p Roadster \$3,500	..... 5-p Sedan 4 d. 1,680	..... 7-p Touring De L. 1,985
4190 2-p Roadster \$3,185	3800 4-p Sp. Tourer 3,500	2720 5-p Brougham 1,760	3430 4-p Coupe 2,185
4280 7-p Touring 3,185	3700 4-p Phaeton 3,500	FORD F	Without Starter and Dem. Rims
4200 4-p Phaeton 3,185	4200 4-p Petite Coupe 4,500	1369 2-p Runabout \$260	3540 5-p Brougham Sedan 2,250
4240 5-p Coach 3,185	4200 4-p Petie Sedan 4,500	With Balloon Tires 305	..... 5-p Broug. Sed. DeL. 2,685
4610 7-p Sedan 3,835	4500 4-p Delux Coupe 4,750	1494 5-6 Touring 290	..... 5-p Brougham 2 d. 1,895
4380 4-p Victoria 3,485	4700 4-p Sedan 4,700	With Balloon Tires 335	4070 7-p Sedan De Luxe 3,285
4525 5-p Landau 3,835	4800 7-p Sedan 4,750	With Starter and Dem. Rims	4010 7-p Berlinle Sed. DeL. 3,385
4655 7-p Std. Imperial 4,010	(120 in. W. B.)	1521 2-p Runabout 345	3530 5-p Victoria 2,285
"Custom Built"		With Balloon Tires 370	..... 5-p Victoria De Luxe 2,685
(132 in.)		1644 5-p Touring 375	"75"
4260 2-p Coupe 3,975	3070 5-p Imperial Sedan 1,795	With Balloon Tires 400	..... 2-p Speedster 2,195
(138 in.)	3065 5-p Berline Sedan 1,995	1749 2-p Coupe 520	..... 2-p Speedster De L. 2,485
4400 5-p Coupe 4,350	2700 5-p Brougham 1,595	With Balloon Tires 545	..... 4-p Speedster 2,295
4490 5-p Sedan 4,550	2835 4-p Roadster 1,795	1882 5-p Sedan, Tudor 580	2-p Speedster De L. 2,585
4590 7-p Suburban 4,650	3020 5-p Phaeton 1,695	With Balloon Tires 605	2-p Enc. Sp'd'r DeL. 2,985
4655 7-p Imp. Suburban 4,950	3050 5-p Brougham 1,895	1927 5-p Sedan, Fordor 660	4-p Tourster 2,195
CASE J. I. C.	3245 5-p Imperial Sedan 2,095	With Balloon Tires 685	4-p Tourster De L. 2,385
3260 3-p Roadster \$1,840	3215 5-p Berline Sedan 2,205	FRANKLIN "11-A"	5-p Phaeton 1,985
3290 5-p Touring 1,885	2750 5-p Legionaire Tour. 1,495	2800 3-p Sport Roadster \$2,800	5-p Phaeton De Luxe 2,185
3470 5-p Sp. Touring 2,160	..... 5-p Phaeton 1,395	2845 5-p Touring 2,650	7-p Touring 2,085
3570 4-p Sub. Coupe 2,480	..... 5-p Sedan 1,595	2965 3-p Coupe 2,700	7-p Touring De Luxe 2,285
3640 5-p Sedan 2,590	2473 2-p Roadster \$ 855	3175 5-p Sedan 3,200	4-p Coupe 2,485
3650 5-p Brougham 2,590	2593 2-p Special Roadster 955	3080 5-p Sport Sedan 3,350	4-p Coupe De Luxe 2,885
	2567 5-p Touring 885	3275 7-p Limousine 3,500	5-p Brougham Sedan 2,550
	2695 5-p Spec. Touring 985	3135 7-p Cabriolet 4,400	5-p Brougham 2 d. 2,195
	2708 2-p Coupe "B" 995	3210 5-p Touring \$1,395	7-p Sedan De Luxe 3,485
	2823 2-p Spec. Coupe "B" 1,095	3240 5-p Brougham 1,595	7-p Berl. Sed. De L. 3,585
	2995 5-p "B" Sedan 1,095	3310 5-p Sedan 1,795	7-p Victoria 2,585
	3077 5-p Spec. "B" Sedan 1,195	..... 5-p Sport Sedan 1,895	7-p Victoria De Luxe 2,985
	3020 5-p Sedan A 1,245	GARDNER "Series 5"	
	3107 5-p Spec. "A" Sedan 1,330	3010 5-p Touring \$1,395	
	2723 5-p Coach 1,095	2895 5-p Coupe \$1,275	
	2823 5-p Spec. Coach 1,195	3070 5-p Sedan 1,475	
		3070 5-p Sp. Sedan 1,595	
		GARDNER "Series 6"	
		3350 5-p Touring 1,995	
		3510 5-p Brougham 1,995	
		3600 5-p Sedan 2,495	
		GRAY "O"	
		1750 5-p Touring \$630	
		1880 3-p Coupe 845	
		2020 5-p Sedan 895	
		2130 5-p Royal Sedan 975	
		HAYNES "60"	
		3295 5-p Touring 1,600	
		3650 5-p Brougham \$2,200	
		3765 5-p Sedan 2,300	
		HERTZ D-1	
		3260 5-p Sedan \$1,695	
		LINCOLN	
		4380 2-p Roadster \$4,000	
		4550 7-p Touing 4,000	

Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE. PRICE LINCOLN (Cont'd)	SHIP. WT. PASS. BODY STYLE. PRICE NASH (Cont'd) "Advanced" (127 in. W. B.)	SHIP. WT. PASS. BODY STYLE. PRICE PIERCE-ARROW (Cont'd)	SHIP. WT. PASS. BODY STYLE. PRICE STEVENS-DURYEA
4565 4-p Phaeton \$4,000 Sport Touring 4,500 4655 4-p Coupe 4,600 4775 4-p Sedan 4,800 4825 5-p Sedan 4,900 4865 7-p Sedan 5,100 4945 7-p Limousine 5,300	3480 7-p Touring \$1,525 3640 4-p Victoria 2,090 3750 5-p Coupe 4 d. 2,190 3830 7-p Sedan 2,290	3200 4-p Roadster \$2,895 3365 4-p Coupe Landau 3,820 3335 4-p Coupe 3,695 3440 5-p Sedan 3,895 3560 7-p Sedan 3,995 3615 7-p Enc. Drive Lim. 4,045	4200 2-p Roadster \$8,150 4400 7-p Touring 7,500 4250 4-p Sp. Touring 7,750 4600 4-p Coupe 9,000 4600 4-p Sedan 10,000 4800 6-p Sedan 9,675 4800 6-p Town Brough. 10,175
LOCOMOBILE "48"	OAKLAND "6-54"	REO "T-6"	VESTIBULE LIMOUSINE
5280 4-p Sportif Tour \$7,460 5330 7-p Touring 7,460 5630 5-p Victoria Sedan 10,050 5464 7-p Brougham 10,040 5640 7-p Touring Lim. 9,500 5868 7-p Enc. Drive Lim. 10,050 5600 7-p Cabriolet 10,300	2420 3-p Roadster \$1,095 2510 3-p Sp. Roadster 1,195 2485 5-p Touring 1,095 2550 5-p Sp. Touring 1,195 2620 5-p Coach 1,215 2620 3-p Landau Coupe 1,295 2720 4-p Coupe 1,495 2700 5-p Sp. Sedan 1,375 2860 5-p Sedan 1,545 2885 5-p Landau Sedan 1,645	3350 3-p Sp. Roadster \$1,765 3182 5-p Sp. Touring 1,595 3350 2-p Coupe 1,645 3450 4-p Coupe 1,975 3400 5-p Sedan 1,645 3545 5-p Sedan 2,085 3705 5-p Brougham 4 d. 2,235	4800 6-p Vestibule Limou. 9,675 4800 7-p Vestibule Lim. 10,175 4800 7-p 1/4 Limousine 10,175 4800 7-p Cabriolet 10,175
McFARLAN "6"	OLDSMOBILE "30"	REVERE "25"	STUDEBAKER Standard Six
3700 2-p Roadster \$2,650 2-p Spec. Roadster 2,900 3600 5-p Touring 2,650 7-p Touring 2,750 4-p Coupe 3,180 3850 5-p Sedan 3,180 5-p Spec. Sedan 3,180 3850 7-p Sedan 3,280 5-p Sub. Sedan 3,380 7-p Sub. Sedan 3,480 5-p Brougham 4 d. 3,180	2270 2-p Roadster \$890 2270 2-p Sp. Roadster 985 2200 5-p Touring 890 2360 5-p Sp. Touring 1,015 2330 2-p Bus. Coupe 1,045 2460 4-p Coupe 1,175 2410 5-p Coach 1,075 5-p De Luxe Coach 1,150 2570 5-p Sedan 1,285 2740 5-p De Luxe Sedan 1,375	3900 2-p Sp. Roadster \$2,750 3975 4-p Speedster 2,750 4050 5-p Touring 2,750 4300 5-p Sedan 3,800	2760 3-p Du. Roadster \$1,125 2870 5-p Du. Phaeton 1,145 2945 3-p Country Club 1,345 2980 5-p Coach 1,295 4400 5-p Sedan 1,595
MARMON "74"	OVERLAND "91" 4 (100 in. W. B.)	RICKENBACKER D	Special Six
4000 2-p Roadster \$5,400 4600 4-p Sp. Touring 5,600 4900 4-p Coupe 6,720 5200 4-p Tour. Sedan 6,720 5200 7-p Tour. Sedan 6,810	2443 5-p Sta. Sedan 895 2584 5-p Sedan De Luxe 1,150	2864 4-p Sp. Roadster \$1,595 2787 5-p Sp. Touring 1,395 3040 4-p Coupe 1,895 3027 5-p Coach Brough. 1,595 3143 5-p Sedan 1,995	3400 4-p Du. Roadster 1,495 3480 4-p Sp. Roadster 1,645 3475 5-p Du. Phaeton 1,450 3605 4-p Club Coupe 1,695 3675 4-p Victoria 1,895 3785 5-p Brougham 1,795 3545 5-p Coach 1,595 3885 5-p Sedan 2,045 3890 5-p Berline 2,120
MAXWELL "25"	PACKARD "6"	ROAMER "6-54-E"	Big Six
2130 2-p Roadster \$885 2210 5-p Touring 895 2255 2-p Club Coupe 995 2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095 2595 5-p Spec. Sedan 1,245	3643 4-p Roadster \$2,785 3653 5-p Touring 2,585 3655 4-p Sp. Touring 2,750 3753 4-p Coupe 2,585 3753 5-p Coupe 2,685 3974 5-p Sedan Limousine 2,885	3326 4-p Sport Phaeton 2,195 3440 4-p Coupe 2,695 3485 5-p Coach Brough. 2,395	3785 7-p Du. Phaeton \$1,875 4030 5-p Coupe 2,450 4095 5-p Brougham 4 d. 2,575 4200 7-p Berline 2,650
MERCER "6"	PAIGE "21-24"	ROAMER (118 in. W. B.)	STUTZ "6-94"
3860 3-p Runabout \$4,500 3950 6-p Touring 4,500 3900 4-p Sporting 4,500 4070 4-p Coupe 6,250 4240 5-p Sport Sedan 6,250 4350 4-p Tour. Limousine 6,500 4300 4-p Brougham 6,500	4060 4-p Runabout 3,950 4090 5-p Touring 3,759 4023 4-p Sp. Touring 3,900 4242 4-p Coupe 4,650 4337 5-p Coupe 4,825 4528 5-p Sedan 4,750 4535 5-p Sedan Limousine 4,850	3100 2-p Roadster \$2,685 3100 4-p Tourer 2,485 3300 4-p Sp. Touring 2,750 7-p Touring 2,685 3-p Cabriolet 3,285 138 in. W. B.	3492 2-p Roadster \$2,395 3640 5-p Touring 2,395 3940 4-p Coupe 3,050 3926 5-p Sedan 3,050
MOON Series "A"	PEERLESS "6-72"	ROLLIN	"6-95"
2440 5-p Roadster \$1,395 2625 3-p Cab. Roadster 1,695 2460 5-p Touring 1,295 7110 5-p Del. Sedan 2d. 1,695 3550 5-p DeLuxe Sedan 4d. 1,785 2850 5-p Sedan 4 d. 1,595	3935 7-p Phaeton \$2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840	3600 4-p Sport 3,650 3200 2-p Spec. Speedster 3,785	4064 5-p Sportster 3,035 4152 7-p Tourster 3,070 4305 5-p Sportbroughm. 3,785 4622 7-p Suburban 3,935 4675 7-p Berline 4,035
PEIERCE-ARROW	PAIGE "21-24"	ROLLIN	VELIE "60"
3020 5-p Sedan 1,995 3190 5-p Sp. Sedan 2,095	3175 5-p Touring \$1,895 3425 5-p Coupe 2,495 3500 5-p Sedan 2,565	2360 5-p Touring \$1,155 2405 3-p Coupe 1,325 2595 5-p Brougham 1,325 2575 5-p Sedan 1,455	3030 4-p Sp. Roadster \$1,650 2840 5-p Touring 1,275 3025 5-p Club Phaeton 1,450 3150 4-p Coupe 1,825 3340 5-p Royal Sedan 1,925 3083 5-p Coach 2 d. 1,425 3005 5-p Coach 4 d. 1,450
PEIERCE-ARROW	PAIGE "21-24"	ROLLS-ROYCE Chassis	WESTCOTT "44"
2860 5-p Touring \$1,515 3020 5-p Sedan 1,995 3190 5-p Sp. Sedan 2,095	3275 7-p Touring 1,995 3300 2-p Roadster 2,285 3825 7-p Limousine 2,925	3600 4-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820	3150 5-p Spec. Touring \$1,970 3300 4-p Brougham 3 d. 2,320
PEIERCE-ARROW	PAIGE "21-24"	ROLLS-ROYCE Chassis	"60"
3270 5-p Sp. Touring \$1,985 3590 5-p Petite Sedan 2,540	3950 4-p Phaeton 2,945 3995 7-p Phaeton 2,990 4310 5-p Town Brougham 3,895 4310 5-p Town Sedan 3,895	1725 2-p Roadster \$540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820	3300 5-p Sedan \$2,325
PEIERCE-ARROW	PAIGE "21-24"	STAR	WILLS SAINT CLAIRE "B-68"
2870 2-p Roadster \$1,095 2960 5-p Touring 1,095 3120 5-p Sedan 1,225 3270 5-p Sedan 4 d. 1,545	4350 2-p Runabout \$5,250 4500 4-p Touring 5,250 4730 3-p Coupe 6,800 4850 7-p Limousine 7,000 5060 7-p Enclosed Lim. 7,000 4780 7-p French Lim. 7,000 4730 6-p Landaulet 7,000	3775 5-p Phaeton \$2,165 3775 5-p Brougham 2,195 3750 4-p Coupe Brougham 2,095 5-p Brougham 2,095	3000 5-p Sedan \$2,325
PEIERCE-ARROW	PAIGE "21-24"	STAR	(127 in. W. B.)
3320 3-p Roadster 1,375 3400 5-p Touring 1,375 3550 5-p Sedan 2 d. 1,485	4960 7-p Sedan 7,000 4750 4-p Coupe Sedan 6,900 4730 6-p Brougham 6,800 4850 7-p Limousine 7,000 5060 7-p Enclosed Lim. 7,000 4780 7-p French Lim. 7,000 4730 6-p Landaulet 7,000	3775 5-p Touring 1,595 3775 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 3750 5-p Brougham 2,095	C-68" (Custom Built 127 in. W. B.)
PEIERCE-ARROW	PAIGE "21-24"	STAR	WILLYS-KNIGHT "65"
3525 4-p Touring \$1,875 3540 5-p Touring 1,875 3550 5-p Sport Coupe 2,185 3650 5-p Coupe Brougham 2,285 3700 5-p Sedan 2,475 3700 5-p Brough. Sedan 2,480	3775 5-p Touring 1,595 3775 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 3750 5-p Brougham 2,095	3265 4-p Roadster \$2,985 3335 5-p Traveler 3,085 3500 7-p Phaeton 2,885 3495 4-p Coupe 3,785 3625 5-p Sedan 3,885 3635 7-p Sedan 3,900 3570 5-p Brougham 4 d. 3,900 3710 7-p Limousine 4,085 7-p Town Car 5,500	"W-6" (127 in. W. B.)
PEIERCE-ARROW	PAIGE "21-24"	STAR	"W-6" (127 in. W. B.)
3525 4-p Touring \$1,875 3540 5-p Touring 1,875 3550 5-p Sport Coupe 2,185 3650 5-p Coupe Brougham 2,285 3700 5-p Sedan 2,475 3700 5-p Brough. Sedan 2,480	3775 5-p Touring 1,595 3775 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 3750 5-p Brougham 2,095	3410 4-p Roadster \$2,485 3550 5-p Gray Goose Trav. 2,485 3500 7-p Touring 2,385 3630 4-p Coupe 2,985 3630 5-p Brougham 3,185 3680 5-p Sedan 3,185 3775 7-p Sedan 3,285 3835 7-p Limousine 3,385	"W-6" (127 in. W. B.)
PEIERCE-ARROW	PAIGE "21-24"	STAR	WILLYS-KNIGHT "65"
3270 5-p Sp. Touring \$1,985 3590 5-p Petite Sedan 2,540	4800 4-p Sedan 6,900 4960 7-p Sedan 7,000 4730 3-p Coupe 6,800 4850 7-p Limousine 7,000 5060 7-p Enclosed Lim. 7,000 4780 7-p French Lim. 7,000 4730 6-p Landaulet 7,000	3088 5-p Coupe Sedan 1,495 3119 5-p Brougham 1,695	"6"
PEIERCE-ARROW	PAIGE "21-24"	STAR	"6"
3270 5-p Sp. Touring \$1,985 3590 5-p Petite Sedan 2,540	4960 7-p Sedan 7,000 4750 4-p Coupe Sedan 6,900 4730 6-p Brougham 6,800 4850 7-p Limousine 7,000 5060 7-p Enclosed Lim. 7,000 4780 7-p French Lim. 7,000 4730 6-p Landaulet 7,000	3323 2-p Roadster \$1,845 3395 5-p Touring 1,845 3200 2-p Coupe Roadster 3,100 3450 5-p Sedan 2,800 3582 5-p Coupe Sedan 2,145 3550 7-p Sedan 2,295 3450 4-p Sp. Brougham 2,750 3686 4-p Coupe 2,345 5-p Sedan 2,495	"6"

Mechanical Specifications of Current Passenger Car Models

This list comprises cars distributed on a national basis

extra cost



AN ACCOUNTING AND A PLEDGE

Cadillac keeps young and vigorous and virile because it is continuously refreshed and inspired by the sympathetic interest of a million friends.

It renews its youth every day upon the generous approval of tens of thousands of owners and their families who take the time and the trouble to express their friendship for Cadillac—and their faith in its unremitting zeal to serve.

Cadillac is gloriously young after twenty-three years of adherence to the one ambition of remaining the Standard of the World—after ten years of dedication to the task of outstripping the world in the futherfordance of the eight-cylinder principle.

It is splendidly young in spite of the fact that its traditions are old—or rather because of the fact that those traditions are so fine and high that they make every working day a new day of increasing zest and inspiration.

It has been said, and it is true, that even if the impossible should happen and the directing heads of Cadillac should wish to deviate by a hair's breadth from the ideals which have dominated Cadillac all these years—they would not be permitted to do so.

They would not be permitted to do so because the great group of master workmen who are steeped in the spirit of surpassing excellence would go on ser-

enely as before—or throw down their tools if asked to do anything less than the Cadillac best.

Cadillac is subjected to a pressure from within and from without to excel itself—the pressure of public expectation and the pressure of honest craftsmanship which can work no way other than the Cadillac way.

What is said here is in the nature of an accounting from Cadillac—a re-dedication to high service published at this moment because of the advent of a new, young, and powerful executive leadership.

The pledge is from him—and through him, from the solid phalanx of Cadillac executives and workmen who consider themselves servants of the most loyal public any industrial institution has ever enjoyed.

Great things are always under way for Cadillac and Cadillac owners—not merely a maintenance of the high endeavors of the past but a constant striving after things never yet attained.

To every Cadillac owner of record the executive head of Cadillac will endeavor at the earliest moment to send a personal pledge of the future.

Meanwhile, because you and a million others count upon it—be certain that Cadillac will never fail to realize your highest hopes.

CADILLAC

Division of General Motors Corporation



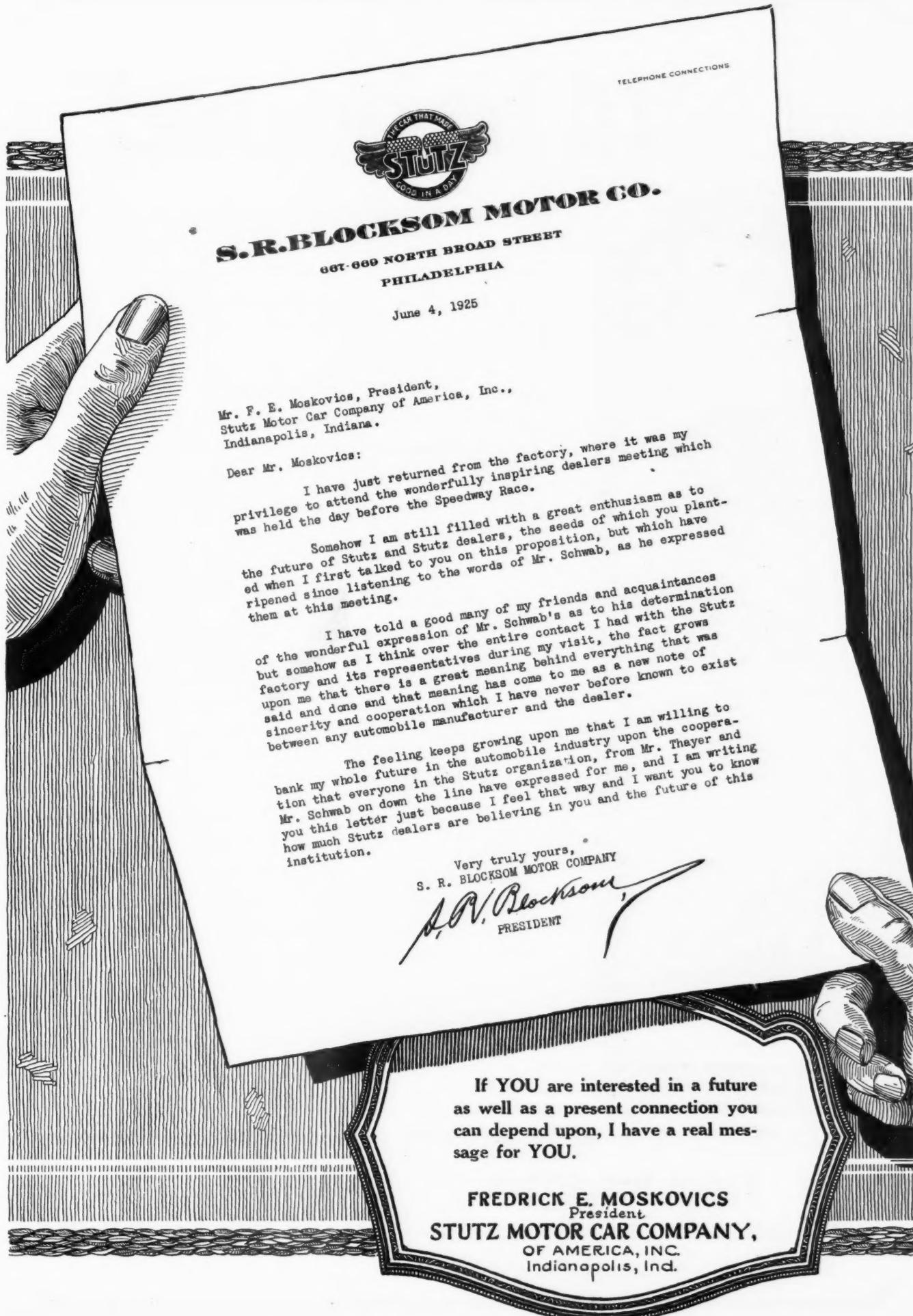
Mechanical Specifications of Current Passenger Car Models—Continued

This list comprises cars distributed on a national basis

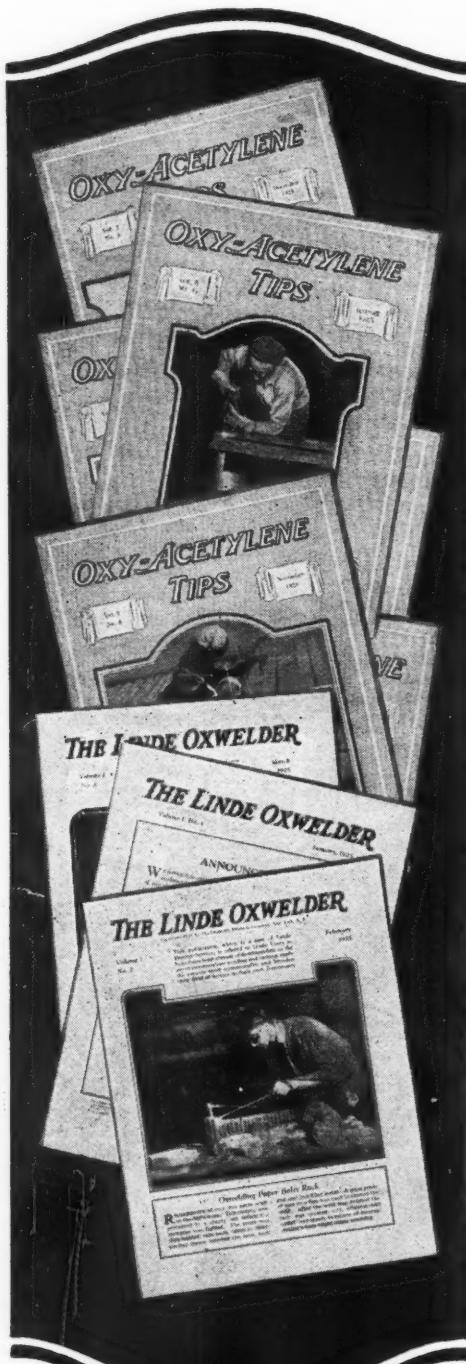
MAKE AND MODEL		ABBREVIATIONS— NAMES OF PARTS																	
WHEEL BASE	TRIE-SIZE—BALLOONS	GEAR SET—MAKER		TYPE AND MAKE		GEAR RATE		REAR AXLE		BRAKES		STEERING GEARS—TYPE AND MAKER		REAR SPRINGS—TYPE AND LENGTH		CHASSIS AND MAKE		TYPE AND MAKE	
WHEELS (inches)	NUMBER OF CYLIES	GEAR SET—MAKER		TYPE AND MAKE		GEAR RATE		REAR AXLE		BRAKES		STEERING GEARS—TYPE AND MAKER		REAR SPRINGS—TYPE AND LENGTH		CHASSIS AND MAKE		TYPE AND MAKE	
J-8	124	Own...8	82x14	25.3	225 T	48.6	45 ¹ / ₂	7 P.F.	Pu.	Int. C.I.	4 P.C. N.	477 E-P.	Ross	S...	Pr-L...	A-K...	Auto-Lite	A-L...	Alwater Kent
Locomobile.....	48	142	35x6.75	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	33.8	340	7 P.F.	Pu.	Int. C.I.	4 P.C. N.	475.0...	Fl. Own.	5.11	1-T...	Pz-E...	Pz-A...	Adams	
Marmon.....	74	136	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	21.0	186	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.10 E-R...	M* Own.	0.45...	E-T...	Pz-A...	Pz-J...	Alemitz	
Marwell.....	25	109	30x5.25	Own...25	6-3 ¹ / ₂ 45 ¹ / ₂	27.3	268	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-J...	Pz-B...	Anstied	
McFarlan.....	SV	127	32x6.20	Wis...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Borg & Beck	
McFarlan.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Brown-Lipe	
Mercer.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Bustico cups	
Mercer.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Bijur	
Mercer.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Boen Products	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Carter	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	CAS Products	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Cle-Cleveland	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Detroit	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Die-Dweller	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Dot-Dot	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Dussenberg	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Dur-Dur	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Dyno-Dyno	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Eat-Eaton	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Fil-Filmt	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Ful-Fuller	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Gem-Gemmer	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Hoo-Hoover	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Jac-Jac	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Johnson	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	King-Kingston	
Mercury.....	TV	140	31x5.25	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	L-N—Leaves-Neville	
Mercury.....	27	109	32x6.20	Own...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Lav-Lavine	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Lyc-Lycoming	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Merchant & Evans	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Mar-Mar	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Mec-Mechanics Machine Co.	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Mon-Monson	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Mun-Munition	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Ne-North East	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	North-North	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Pet-Peters	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Ray-Rayfield	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Rox-Roxford	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Sa-Salisbury	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Sch-Scheller	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Sne-Snead	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Sp-Special Make	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Spe-Spieler	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Spl-Splitter	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	St-Stewart	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Sterling	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Str-Strongberg	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	The-Thermoid	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Th-Thiemer	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Tim-Timken	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Un-Universal	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	War-War Gear	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Wag-Wager	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	War-War	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Westinghouse	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Wirs-Wisconsin	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	140	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Z-Zerk	
Mercury.....	TV	140	31x5.25	Mon...74	6-3 ¹ / ₂ 45 ¹ / ₂	115	73	3 P.C. F.	Pu.	Int. C.I.	3 P.C. N.	4.40 E-R...	N Gem.	5.53...	E-T...	Pz-B...	Pz-B...	Zen-Zenith	
Mercury.....	27	109	32x6.20	Mon...74	6-3 ^{1</sup}														

1—Aluminum

Annals



"I'll be bound"



THOUSANDS of copies of "Oxy-Acetylene Tips" can say this. This monthly magazine is saved and it is bound because the first number (August, 1922) is just as valuable for reference today as when it was published.

"Tips" is valued by every man from the president to the welder. It tells how to improve the work now being done. It suggests new welding and cutting operations. It points out economies. It is saved and bound because it aids in solving many problems.

"Something useful in every number"

"I have received copies of your publication, 'Oxy-Acetylene Tips,'" writes a welding foreman, "and like it so well that I do not want to miss future issues. There is something useful in every number, even to a welder who has been in the business twelve years, like myself."

"Tips" is free to all Linde customers. Ask the nearest Linde District Office to send you this monthly magazine which has "something useful in every number." For smaller shops Linde publishes another magazine—"The Linde Oxwelder." It's free, too.

THE LINDE AIR PRODUCTS COMPANY

General Offices: Carbide & Carbon Building
30 East 42d Street, New York

37 PLANTS — 80 WAREHOUSES
22 DISTRICT SALES OFFICES

LINDE OXYGEN

YOU CAN DEPEND ON THE LINDE COMPANY

IN the May magazine we promised you a new, money-making idea for selling tires . . .

Well, it's here . . . right in this June issue . . . on another page.

Look
for
it . . .

EMPIRE TIRE and RUBBER CO.
Trenton - - - - New Jersey

The New Pierce-Arrow buying centers offer *Increased Profit Opportunities*

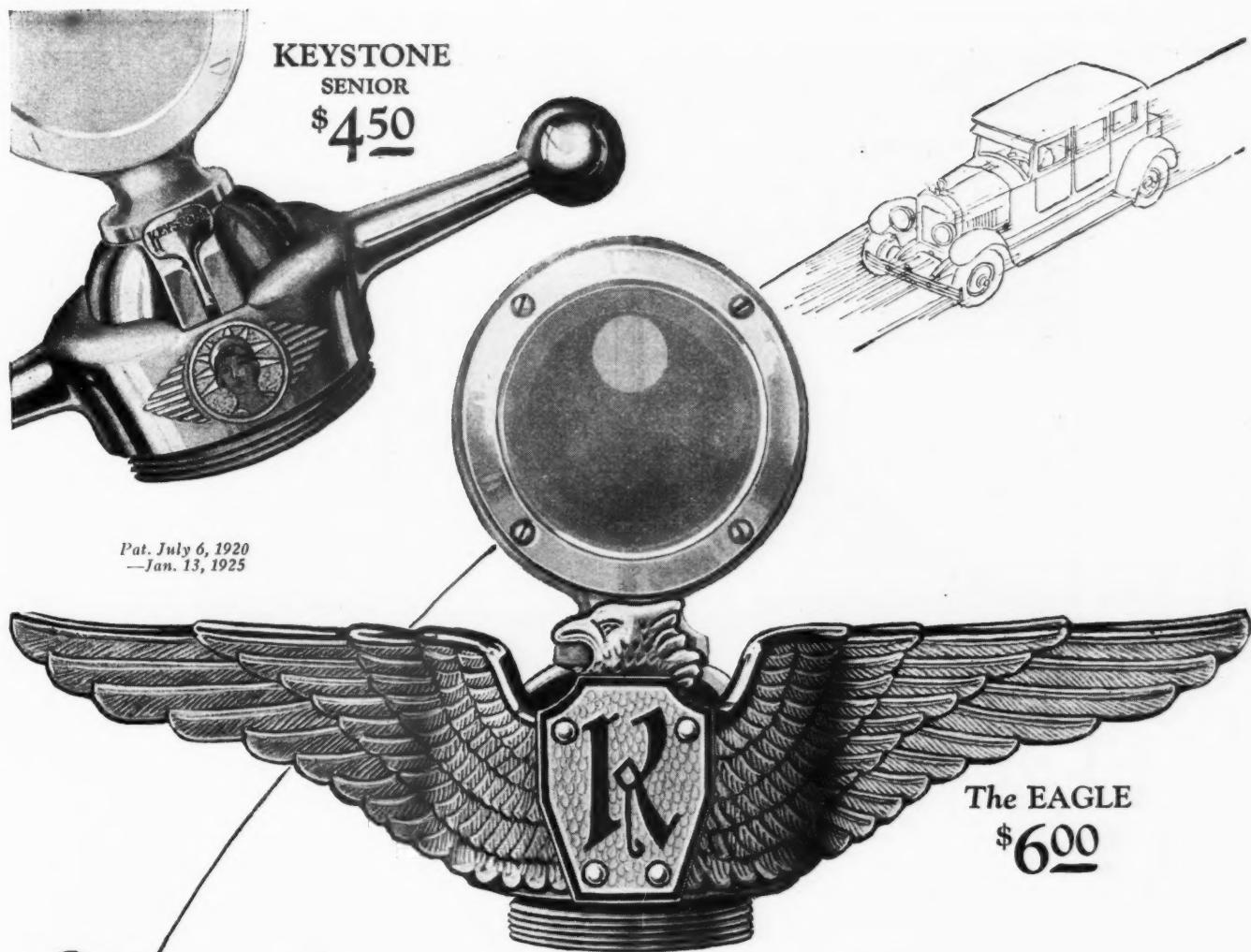


The moderately priced Series 80 car alone has multiplied Pierce-Arrow sales possibilities *EIGHTEEN TIMES*.

Q In addition the Pierce-Arrow franchise, which covers the moderately priced car, the higher priced car, the complete line of trucks and motor busses, contains most liberal terms and some very attractive distributor profit features. Q As a result, the new buying centers, made necessary to serve a steadily increasing Pierce-Arrow market, are being rapidly taken up. Q Some very desirable buying centers are still available at this writing. You can find out if you are located in one of them by communicating with us.

THE PIERCE-ARROW MOTOR CAR COMPANY, Buffalo, N. Y.

PIERCE-ARROW



*No other cap
rivals Keystone quality
in beauty - utility or price*

LAST month more owners bought KEYSTONE Caps; more representative jobbers and dealers demanded them, than in any month in the history of this company.

The trade and the public are beginning to realize that no other Cap rivals KEYSTONE Quality, in Beauty, Utility or Price.

The beautiful KEYSTONE Eagle [large size] and Eaglet [small size] are, admittedly, the most decorative radiator dress on the market.

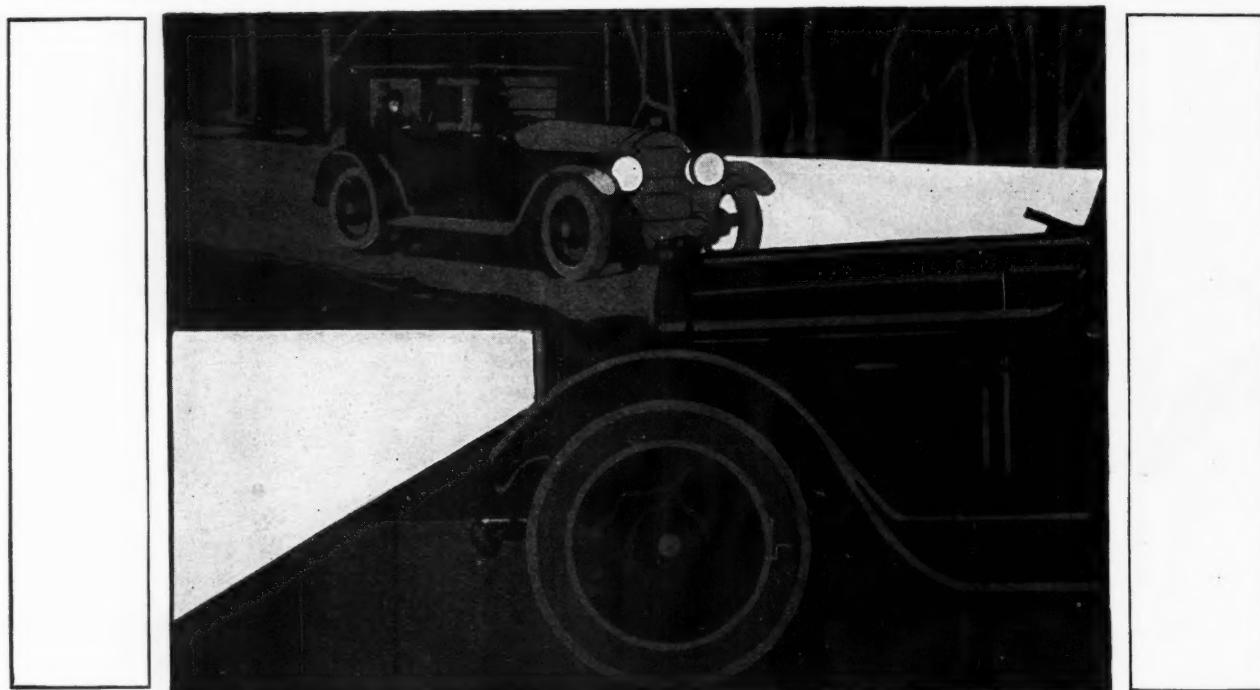
KEYSTONE Senior [large size] and Junior [small size] bar-type, ball-end Caps, represent Cap value unapproached by any other equipment of same grade and style.

All KEYSTONE Caps have the time-proven and accepted mechanical features. They are permanently theft-proof because, being absolutely rust-proof, they will not stick or "freeze".

KEYSTONE Caps are the preferred line today. Ask your Jobber or write us.

THE NORLIPP COMPANY, 568 W. Congress Street, Chicago

KEYSTONE SELF-LOCKING RADIATOR CAPS



The Bright Lights of Safety

EVERY car owner has long known that a brilliant all-illuminating road light was the thing needed to make night driving safe. But never until the advent of the reflector-control principle of road illumination has the use of full bulb power been legal, because, while it brought safety by its brightness, it brought danger by its glare.

The reflector-control principle has entirely removed the glare danger by putting all the light down on the road well below the eyes of the approaching drivers.

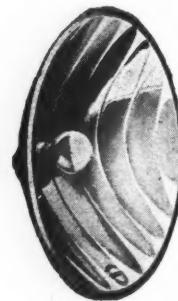
Car owners can now enjoy the thrill of driving

behind a penetrating beam of full road light—a light that searches out far ahead all the lurking dangers of the night—by the simple expedient of having Brown-Universal Reflectors put in their present headlamps right over the old reflectors and the plain glass lenses that come with them in place of the present lenses.

A quick, easy, inexpensive installation that will give more real pleasure plus night driving safety than any purchase that can be made for any car and offers to dealers an unequalled merchandising opportunity. Write for bulletin today.

The Cincinnati Victor Co.

MANUFACTURERS OF THE FAMOUS VICTOR LINE OF AUTOMOTIVE LAMPS



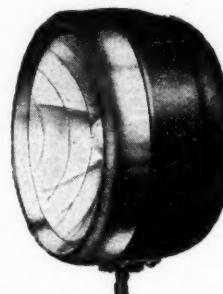
Brown-Universal Reflectors are sold separately for installation in any headlamp. Complete with plain glass lenses.

"A LAMP FOR EVERY



Victor Headlamps equipped with Brown-Universal Reflectors to fit all cars.

AUTOMOTIVE NEED"



Victor

BROWN-UNIVERSAL REFLECTORS

"MAKE ANY HEADLAMP LEGAL ANYWHERE"



For Every Wheel Requirement



The public sets the style in wheels. What type wheel will be selected no one can say—it is a matter of personal opinion. But there is one statement that can be made without possibility of contradiction—motorists want good wheels; safe wheels; wheels of consistent quality. They quite evidently find exactly what they want in Hayes Wheels. Increasing demand proves it.

So that choice may not be limited to one particular type of wheel, Hayes offers *every* type—Wood, Wire and Disc. The public realizes that thirty-six million Hayes Wood, Wire and Disc Wheels in service during 16 years *means* something. The motorist recognizes that the name "Hayes" on the lug denotes the genuine; takes advantage of this knowledge and enjoys the advantages Hayes Wheels and only Hayes Wheels can give in any type wheel that is desired.

HAYES WHEEL COMPANY, Manufacturers, Jackson, Mich.
 Factories: Jackson, Albion, Flint, St. Johns, Mich.; Anderson, Ind.; Nashville, Tenn. Canadian Plants: Chatham and Merriton, Ont.
 Export Office: 30 Water St., New York City

HAYES WHEELS

WITH ATTACHED LUG RIMS ~ STANDARDIZED IN WOOD, WIRE AND DISC

"Look under the fender"—find the Attached-Lug.



Look on the Attached-Lug—find the name "Hayes".

**Because of
THIS—**

**7,000
MORE FORDS
SINCE YESTERDAY**

U-Need-It Pump Reduced to \$5⁵⁰

The sales for U-NEED-IT Pump have run far beyond our fondest expectations.

Just about six weeks ago we told our advertising man that if we could get our daily production up to so many we could reduce the price.

So, here we are—down comes the price.

And, we want to tell you, men, this makes the U-NEED-IT a remarkable value for your customer.

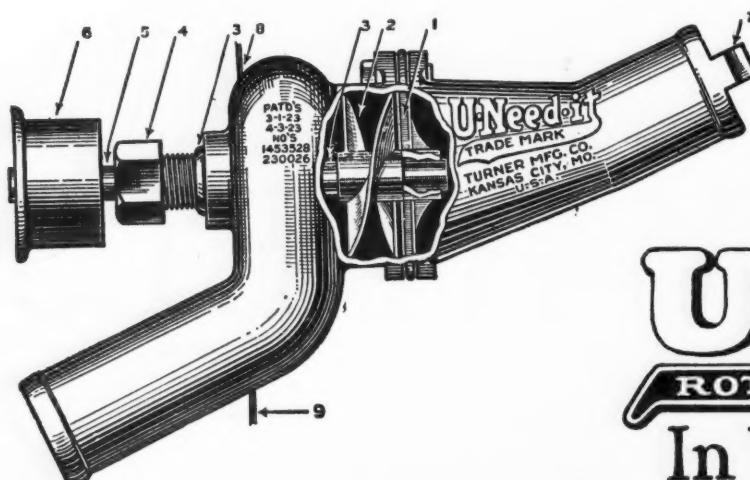
A little better discount is also offered. This with the fact that there is a new fan belt with U-NEED-IT, offers the best deal that you can find in a good, reliable, trade-building Pump for Fords.

\$5⁵⁰ includes belt
Formerly \$6⁵⁰

Discounts vary according to quantities of ONE, SIX or more, TWENTY-FOUR or more.

If you are not acquainted with U-NEED-IT, order a sample and see its sturdiness, ease of installation, and the feature that impels up to 10 times the usual flow of water.

It operates on a loose belt.



**THE TURNER
MANUFACTURING CO.**

31st & Roanoke Road,
Kansas City, Mo.

U-Need-It
ROTARY PUMP FOR FORDS

In Winter and Summer

Do the Job Right!

Put in
"American
Hammered"



"It's a wonderful ring. We recommend it for every replacement job we do and we never have to do the job over.

"That's my idea of *ECONOMY*"

Standardize on American Hammered



*-and you render
a two-fold service*

- 1 You have done the job right
- 2 You have saved your customer
GAS, OIL and PATIENCE!
- with more mileage

"The National Ring"

No matter what a customer comes in for, he may also need new rings — and he may not know it.



EVERY garageman has to decide what kind of a piston ring he is going to put in the replacement jobs entrusted to him.

If he chooses the *finest ring obtainable*, he has taken a great big jump in the direction of success.

There are plenty of examples in the automotive business which have proved this beyond a doubt.

The average motorist is getting "motor-wise"—he is interested in economy. He goes back to the service station where he gets good value. A reputation for reliability means more today than it ever did.

If you really want to build for the future, as well as cash in on present business, follow the example of some of the best and most successful dealers and standardize on American Hammered rings for every job you do.

The highest grade ring you can get is the one that performs the best

ONCE a piston ring is properly fitted and installed, there is just one great big vital requirement—permanent tension.

If the ring you use has that, you have satisfied your customer and won a booster for yourself.

Hammering is the best and most accurate method known to science for putting permanent uniform tension into a piston ring.

American Hammered Piston Rings are placed in hammering machines of our own patented design and hammered with wonderful accuracy—that is why every American Hammered ring seals the compression and performs so perfectly in the engine under all conditions.

The excellence of the American Hammered Piston Ring, its wide distribution, completeness of line, generous dealer profit and unusually low price have made it the undisputed leader in the piston ring replacement field.

AMERICAN HAMMERED PISTON RING CO.
BALTIMORE, MD.

FACTORY STOCKS

BALTIMORE
Bush & Hamburg

CHICAGO

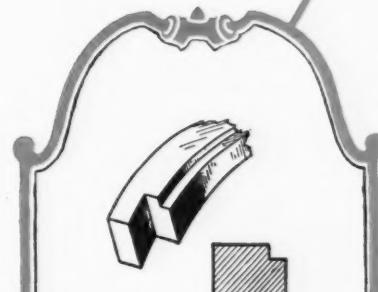
2332 S. Michigan Boulevard

SAN FRANCISCO

931 Larkin Street

American *Hammered* Piston Rings

30c



Oil Ring

The Special American Hammered oil ring is available, when requested, in all stocks—packed in our special red box. Just the thing for cylinders slightly out of round—Same List Price.



WONDERFUL exactness is necessary to hammer rings scientifically. American Hammered Piston Rings are placed in hammering machines of our own patented design and a compressed air hammer strikes successive blows around the inner surface of the piston ring as it revolves.

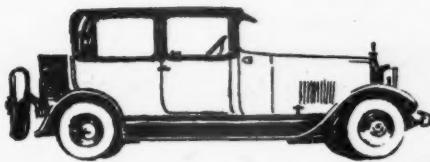
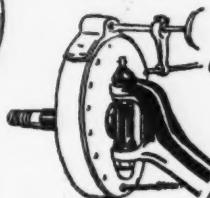
Thus—the metal around the inside is compressed, giving permanent outward tension.

That's why under all conditions of speed, temperature and high pressure in the combustion chamber, American Hammered Piston Rings retain their tension and remain leakless.

Absolute accuracy in our machining is assured by an inspection after each operation of manufacture.

American Hammered Piston Rings

What people ask about

*The Coach**Balloon Tires**Four Wheel Brakes**and*

AUTOMOBILE dealers have profited vastly by respecting the judgment of a purchasing public which has learned to know and to ask for the best in standard equipment.

And recently there has probably been no element more helpful in closing sales than the ability to answer: "Yes, finished with DUCO."

For, although careful car-buyers may be divided on the merits of certain standard accessories, there can be no difference of opinion on DUCO. The *proven* durability, beauty and economy of this waterproof, weatherproof, wearproof finish stand alone.

*The Chemical Engineer—
symbol of du Pont progress
and leadership in the
manufacture of products
based on chemistry.*



E. I. DU PONT DE NEMOURS & CO., INC.

Chemical Products Division

PARLIN, N. J.

FLINT, MICH.

Flint Paint and Varnish Limited, Toronto



REG. U. S. PAT. OFF.

There is only ONE Duco — DU PONT Duco

PACKARD LINCOLN GRAY JORDAN
STUTZ HUDSON NASH CHEVROLET

Fine New Sixes
Open Up Two
New Rich Markets
and Two Extra
Sources of Profits

WRITE FOR THE MONEY-MAKING DETAILS.

PAIGE CADILLAC STAR CASE DURANT
MAXWELL EVERLESS ROLLS ROYCE
STUDEBAKER CHRYSLER BUICK
**WILLYS-
OVERLAND**
MAISON TEARNS HUPMOBILE REO
DODGE CLEVELAND

CASE ROYCE FORD BUICK REO PEERLESS
ROLLS CLEVELAND CHRYSLER

Fours and Sixes
—\$495 to \$2495—
Full Coverage of
Models and Prices
—Big Volume Sales

Willys-Overland, Inc., Toledo, Ohio — Willys-Overland Sales Co. Ltd., Toronto, Canada.

GRAY STUTZ NASH PAIGE DODGE
LINCOLN CHEVROLET CADILLAC
STUDEBAKER MARMON JUPITER
HUDSON REO KARD MAXWELL DURANT
STEAMBOAT STEARNS ESSEX

FINE MOTOR CARS

Hycos

SETS A NEW BRAKING STANDARD

MESABA TRANSPORTATION COMPANY
White Motor Bus  PASSENGER SERVICE

HIBBING, MINN.

January 16th, 1925

The Manhattan Rubber Mfg. Co.
Passaic, N.J.

Dear Sirs:-

In December 1923, your Mr. A. R. Friberg insisted that we give your Hycos Brake Lining an honest trial, which we did. We will admit that we were very skeptical, having heard that "we have the best brake lining" story so many times, but we were willing to try anything in hopes of eliminating our brake troubles.

Our first order was for only one job, which we installed in January 1924. The performance of Hycos showed us that it was by far the most economical brake lining we had ever used.

Our records show that Hycos has given more than four times the service formerly received from the more popular grades of both compressed and woven linings. Not only has Hycos given us longer service, but has required fewer adjustments, and has eliminated entirely scoured drums, and the annoying squeaks.

Since our first trial, in January 1924, we have been using Hycos exclusively on our fleet. In January 1925, we have just given your Mr. Friberg a contract for our 1925 requirements.

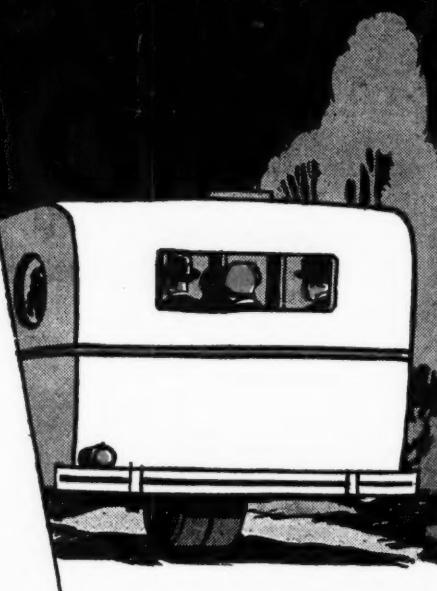
This is in answer to your letter of recent date as to how Hycos Brake Lining is working out on our fleet of busses.

Very truly yours,


H.M. Forn
Sup't.
MESABA TRANSPORTATION COMPANY

BRAKE LINING plus

FOUR TIMES THE SERVICE



THE MANHATTAN RUBBER MFG. COMPANY

Executive Offices and Factories: Passaic, N. J.

Branches:

Chicago
Detroit

New York
Baltimore

Birmingham
Boston

Cleveland
Los Angeles

Minneapolis
New Orleans

Philadelphia
Pittsburgh

Salt Lake City
St. Louis

The Horn that says

\$15

(Retail)
\$17.50

on
West Coast
and Canada

"PLEASE"

Le Claire
The French
Electric
Warning Signal

Here's something really NEW in electric horns—not only new, but BETTER in every way.

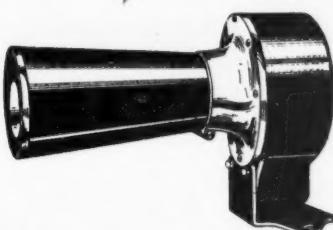
It gives a wonderful, deep, penetrating note. The sound is restful to the driver and pleasing to the person warned. Because of a new and *different* principle the warning note of LE CLAIRE travels to a greater distance, and gets its warning there faster. This new principle is the use of a genuine tuning fork, *electrically* vibrated, and acting on a

Diaphragm of Real Violin Spruce Wood

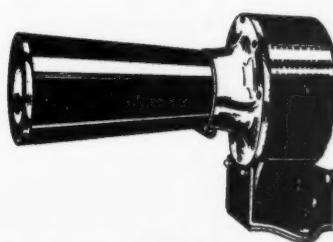
The violin spruce not only purifies and strengthens the sound, but it outlasts even the finest Swedish blue steel discs.

Because there are no rotating or wearing parts there is nothing to get out of order—to oil—to adjust—to be affected by dampness or temperature changes.

Made in two sizes and two tones—both retailing for only \$15.00. Write us now for all the details.



With Bracket A, above, Le Claire can be installed on all running boards and right or left motor installations on many cars.



Bracket B affords dashboard installation on nearly all cars.



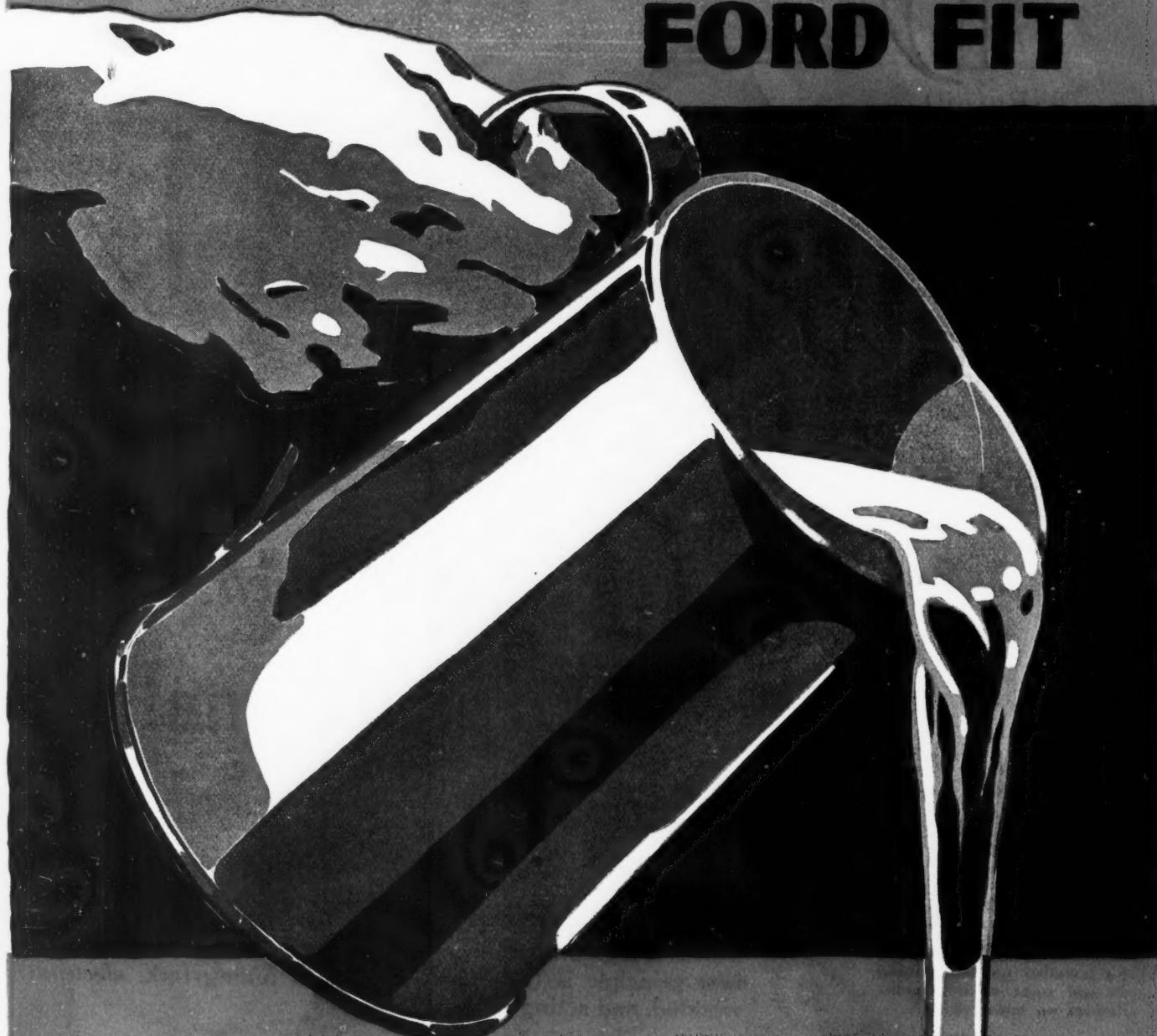
**NEW ERA SPRING & SPECIALTY CO.
GRAND RAPIDS, MICH.**

U. S. A.

*Manufacturers of New Era "Better" Bumpers
Tire Carriers and Springs*



**KEEPS THE OIL
CLEAN AND THE
FORD FIT**



REXOID
TRANSMISSION
LINING FOR FORD CARS



LIKE EVERY Thermoid PRODUCT IT WEARS

WHEN you draw off the oil from your transmission case and it looks like a good quality of black ink—there's something wrong.

Probably the oil is soaking the binding compound out of your transmission lining. And that is bad for the oil, worse for the lining and worse still for the car. Nothing will put your engine on the sick list quicker than dirty oil.

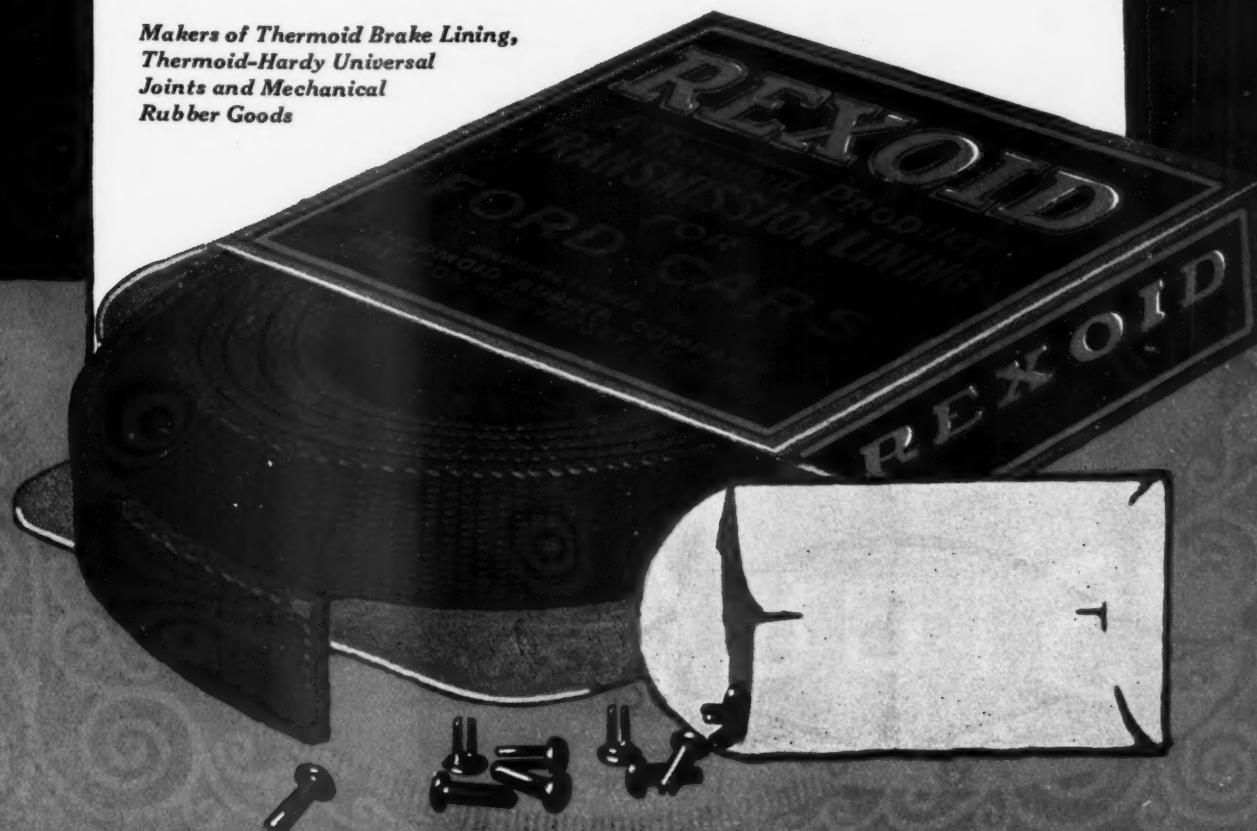
The special Rexoid compound, with which Rexoid Lining is treated, stays where it belongs—in the lining. The oil just naturally can't soak it out.

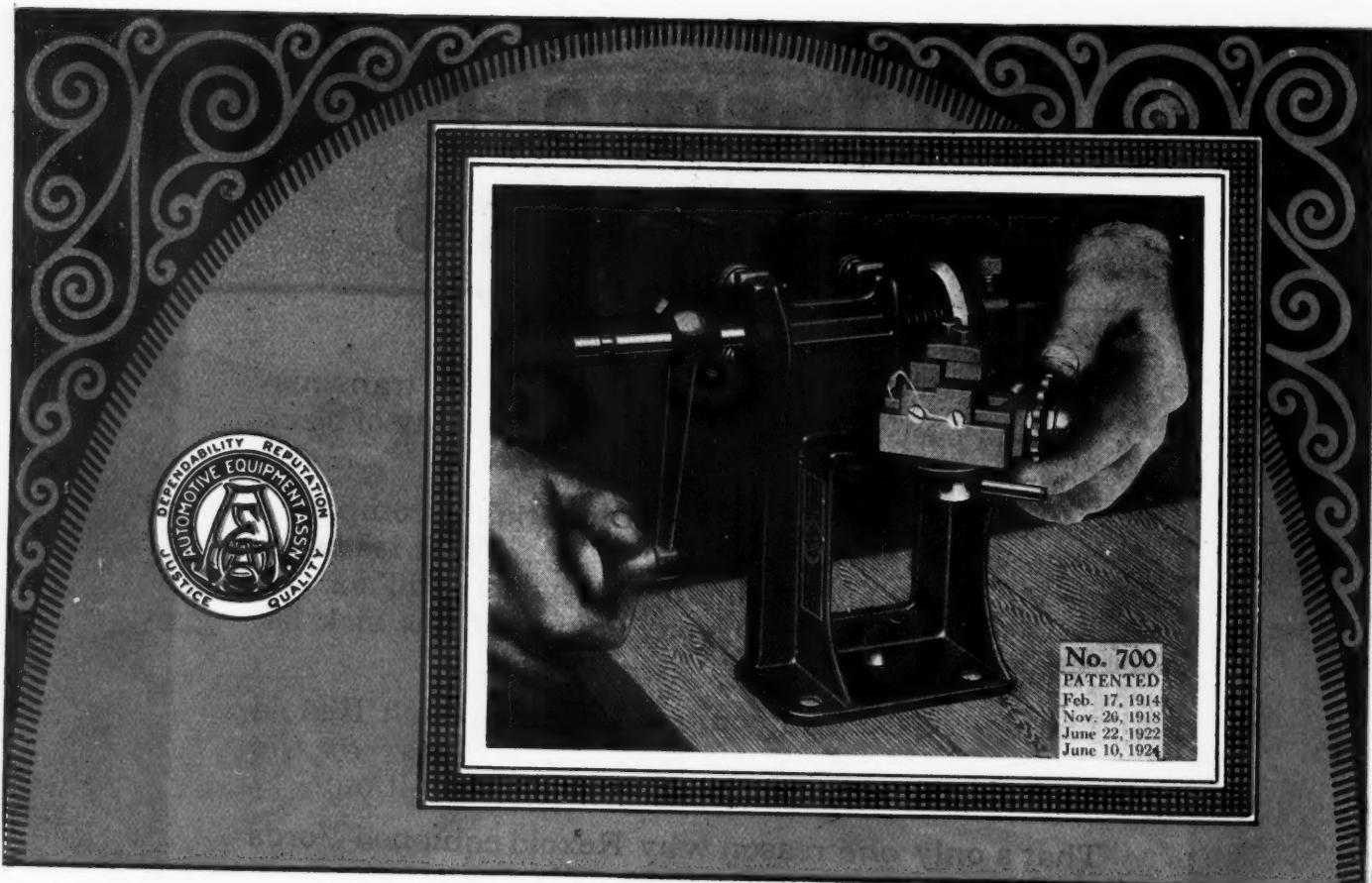
That's only one reason why Rexoid equipped Fords run smoothly and noiselessly. That's only one reason why Rexoid Lining wears so long.

THERMOID RUBBER COMPANY

Factories and Main Offices
TRENTON, N. J.

*Makers of Thermoid Brake Lining,
Thermoid-Hardy Universal
Joints and Mechanical
Rubber Goods*





LITTLE SIOUX VALVE LATHE

THE slickest little tool you ever saw for refacing valves.

A few turns will give a clean smooth face that requires very little grinding in to make it seat perfectly. With pitted, carbon coated or warped valves this is the only way to be sure of a perfect job.

Any valve up to $2\frac{1}{2}$ inches—30, 45 or 60 degree angle—is refaced quickly and accurately by this handy little tool. It cuts the hardest steel valves—including tungsten steel. Its circular cutter leaves no ridges, and cannot get out of cutting line with the valve. It stays sharp a long time. The center adjustment has a positive stop. When set for a certain size valve it will always be perfectly centered for the same size valve. Two clamp devices hold valve stem in perfect alignment.

**Your Jobber
Sells It**

ALBERTSON & CO.
SIOUX CITY, IOWA



The Swing is to the 6-ply Balloon

Again General has anticipated a big major swing in the industry. This time to the 6-ply Balloon. And again the General distributors were ready in advance of actual demand.

In every community the General distributor is known as low-pressure headquarters, selling the fullest advantages of low pressure in Regular Sizes as well as 4-ply and 6-ply Balloons.

*The Mark
of Leading
Tire Stores
Everywhere*



*Be ahead. Write for class AAA
distributors' proposition.*

The
GENERAL
CORD

—goes a long way to make friends

BUILT IN AKRON, OHIO, BY THE GENERAL TIRE AND RUBBER COMPANY

This Notice Means Business

**It's the Easiest Thing in the World to Sell a Speedometer
That Carries Out Ford's Instructions**

THE Ford factory knows its business. When they place this notice on the windshield, they do it because of the importance of keeping the speed under 20 miles per hour for the first 500 miles, and also warning the new owner to change oil at exact periods.

The Stewart-Warner Speedometer and this WARNING go together, for there is no better way to know when to change oil and lubricate.

Here is a made-to-order business for the dealer—something entirely different than any other article that is being merchandised for cars. Ford's instructions make it absolutely necessary that the customer have a Stewart-Warner Speedometer.

When selling the Stewart-Warner Speedometer, you have the advantage of colored lubrication indicators, the chart, and lubrication book, which no other speedometer possesses. NO ADDITIONAL CHARGE IS MADE FOR THESE. IT GIVES YOU A TREMENDOUS SELLING ADVANTAGE.

And the best part of this, from the dealer's standpoint, is the fact that no large investment in stock is necessary. All he need stock is enough Speedometers to care for his average sale of cars, for he

can get them from the Stewart-Warner Products Service Station in his district within a few hours. The Stewart-Warner Service Station is his stockroom, into which he may reach at any time for Stewart-Warner Speedometers or parts.

There is nothing that the dealer can handle that will give him so nice a profit, and so many turn-overs as the Stewart-Warner Speedometer for Fords.

It is easy money, that comes rolling in without any additional selling expense and in such volume that it will practically take care of your overhead.

In the United States and Canada there will be nearly two million and a half Fords delivered this year. Every one of these absolutely needs a Stewart-Warner Speedometer with the colored dials and lubrication chart. Ten to fifteen million dollars profit will be made by dealers on the Stewart-Warner Speedometer this year. How much of this are you going to get?

It's easy. Nothing is easier. Call your customer's attention to this "Notice to User" on the windshield as the first step in selling. Then the customer will realize the absolute need for a Stewart-Warner Speedometer and the sale will be easily made.

The Stewart-Warner Speedometer sells at \$15.00 (\$15.50 west of the 100° Meridian.) It is the easiest Speedometer to install. The installation is practically "velvet" to you for mechanic's time on it is merely "fill-in."

Extensive national advertising will be given the Stewart-Warner Speedometer during the next few months in The Saturday Evening Post, Christian Herald, Country Gentleman, and other magazines, which will reach practically every person in the United States and Canada. This will be a harvest for the dealers. It's a remarkable opportunity.

**STEWART-WARNER SPEEDOMETER CORPORATION
CHICAGO - U. S. A.**

Stewart-Warner Speed



FOR FORM 3741

NOTICE TO USER

To obtain best results this car should not be driven faster than 20 miles per hour for the first 500 miles.

Oil should be changed after first 400 miles and every 750 miles thereafter.

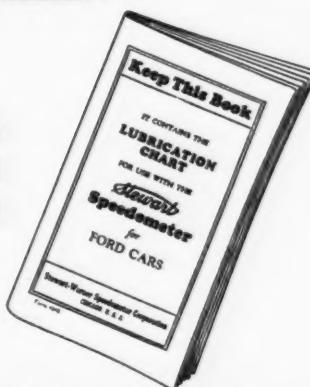
IMPORTANT

Always insist on genuine FORD PARTS

Miles

FOLLOW THESE INSTRUCTIONS WHEN
COLORS APPEAR ON SPEEDOMETER.

- 100 ADD OIL TO MOTOR—Keep level between crank case petcocks. Use light high grade oil.
- 200 OIL—Fill oil cups. Give special attention to commutator.
- 300 GREASE—Fill all grease cups including cup on speedometer swivel joint. Note—To lubricate new style fan bearing, unscrew plug and use heavy fluid oil.
- 400 OIL—Apply oil to all bearing surfaces not supplied with oil cups.
- 500 GREASE—Fill all grease cups. Grease wheel bearings liberally.
- 1000 OIL—Drain oil from crank case following directions in Ford manual.
- 5000 GREASE—Add grease to differential, not more than one-third full.
- GREASE—Reduction gears in steering wheel.

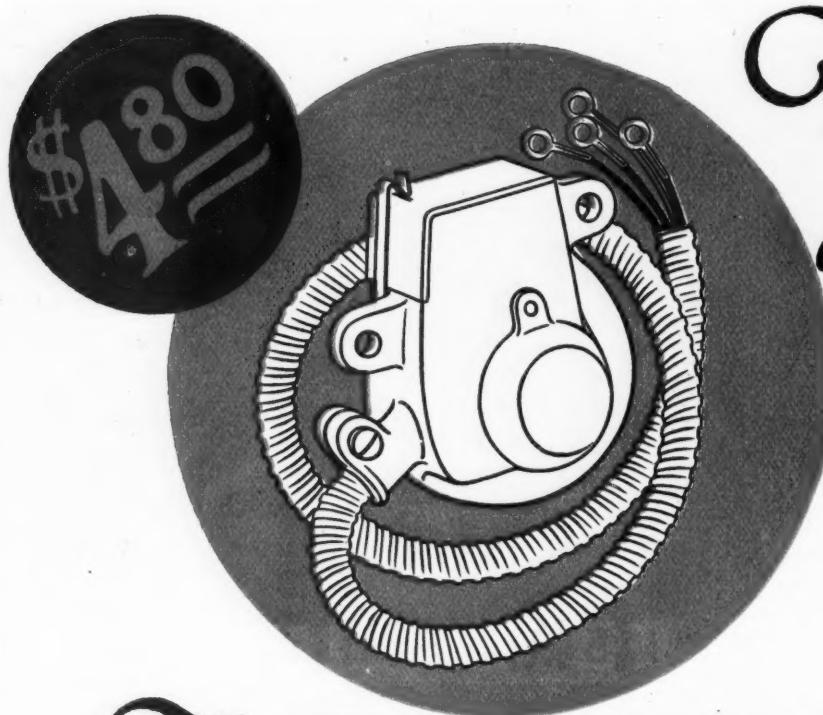


The Only Speedometer with
the Colored Dials and Metal
Chart That Tell When and
Where to Lubricate

Speedometer for Fords

This "Lubrication Book" with cut
of Ford chassis showing the oiling
and greasing points in colors, is fur-
nished free with each speedometer.

Send for a copy and see how thor-
oughly we have covered this important
feature.



*Here's
Something
NEW*

The Kingston Distributor-Timer

Here is a high class distributor selling at the price of an ordinary timer.

Different in design and principle, handsome, splendidly made, it offers the dealer a year around seller on a highly profitable basis. There is a big waiting demand for a distributor of this high character.

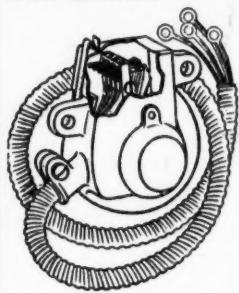
Four sets of adjustable contact points, extra large size; contact levers positive in operation; cables contained in flexible metal conduit; quadrate breaker cam (4 cams in one) of best tool steel; points solidly assembled in bakelite.

Let the KINGSTON lead your spring sales

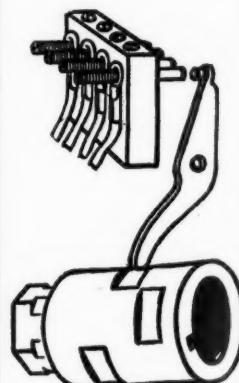


KINGSTON

*Points of
SUPERIORITY~*



Case of aluminum Cables in flexible metal conduit.



Details of point assembly in block of bakelite fibre, with contact lever and quadrate cam. Points extra large and of best material. All parts quickly and easily replaceable.



What AC Means to the Dealer

AC Spark Plugs

 More than 80% of all the cars produced in this country, Fords excluded, are factory equipped with AC Spark Plugs. Among these cars are:

Apperson	Dodge	Maxwell
Buick	Brothers	Nash
Cadillac	Durant	Oakland
Caso	Essox	Oldsmobile
Chandler	Flint	Paige
Chevrolet	Hudson	Star
Chrysler	Hupmobile	Velle
Cleveland	Kissel	Westcott
Davis	Marmen	Willis Sainte Claire

AC 1075 for Fords

 One glance tells the whole story—Why the AC 1075 is an especially good plug for Fords—Here are its features:

- 1 Spring Terminal Clip
- 2 Heavy Body Porcelain
- 3 High Temperature Fins—Patented Carbon-proof Porcelain
- 4 Heavy Electrode Forms Natural Oil Drain.

Dealers who carry a good stock of AC products can build a profitable business. The demand is assured because of their use as car equipment.

* * *

Backed by strong advertising.

* * *

They afford you the margin of profit you should get.

AC Spark Plug Company, FLINT, Michigan

Makers of AC Spark Plugs—AC Speedometers—AC Air Cleaners

AC-SPHINX
Birmingham
ENGLAND

AC-OLEO
Levallois-Perret
FRANCE

AC Speedometers



The Model for Fords

Miles per hour, miles per trip, total mileage—it tells them all. Simple direct drive is a big improvement over previous types of drives as it does away with the swivel joint. Complete with all attachments and once installed is a source of constant satisfaction. The cost is surprisingly low—\$15. (\$21.00 in Canada.)

That AC Speedometers can be depended upon for trouble-free operation, is evidenced by the fact that they are original equipment on such cars as Buick, Cadillac, Chevrolet, Chrysler, Gray, Maxwell, Oakland, Oldsmobile and GMC Trucks.

AC Air Cleaners



Easily installed as it connects directly to the carburetor.

Once installed it requires no attention, having no moving parts to get out of order, and its high permanent cleaning efficiency keeps down repair bills.

Comes complete with all attachments and is reasonably priced—\$5.00 to \$7.00 (\$7.00 to \$10.00 in Canada) depending on the size required.

Less Than Half of One Per Cent

of the Engineers Seem to Realize
That

Steam Cooling is Necessary*

To Get

Absolute Control of Crankcase Dilution
without auxiliary devices

Quick Heating and Slow Cooling
irrespective of weather conditions

20% to 25% More Miles Per Gallon
with improved acceleration and more power

Immunity from Radiator Leakage
as there is no water in the core

Insurance Against Overheating
on a long hill on a hot day

Saving in First Cost
five dollars to twenty dollars a car

Real Steam Heating for Car Body
a constant supply even when idling

No Loss of Alcohol in Winter

*There is no such thing as a water cooled automobile engine. All depend upon boiling to avoid local hot spots.

Waterrr!

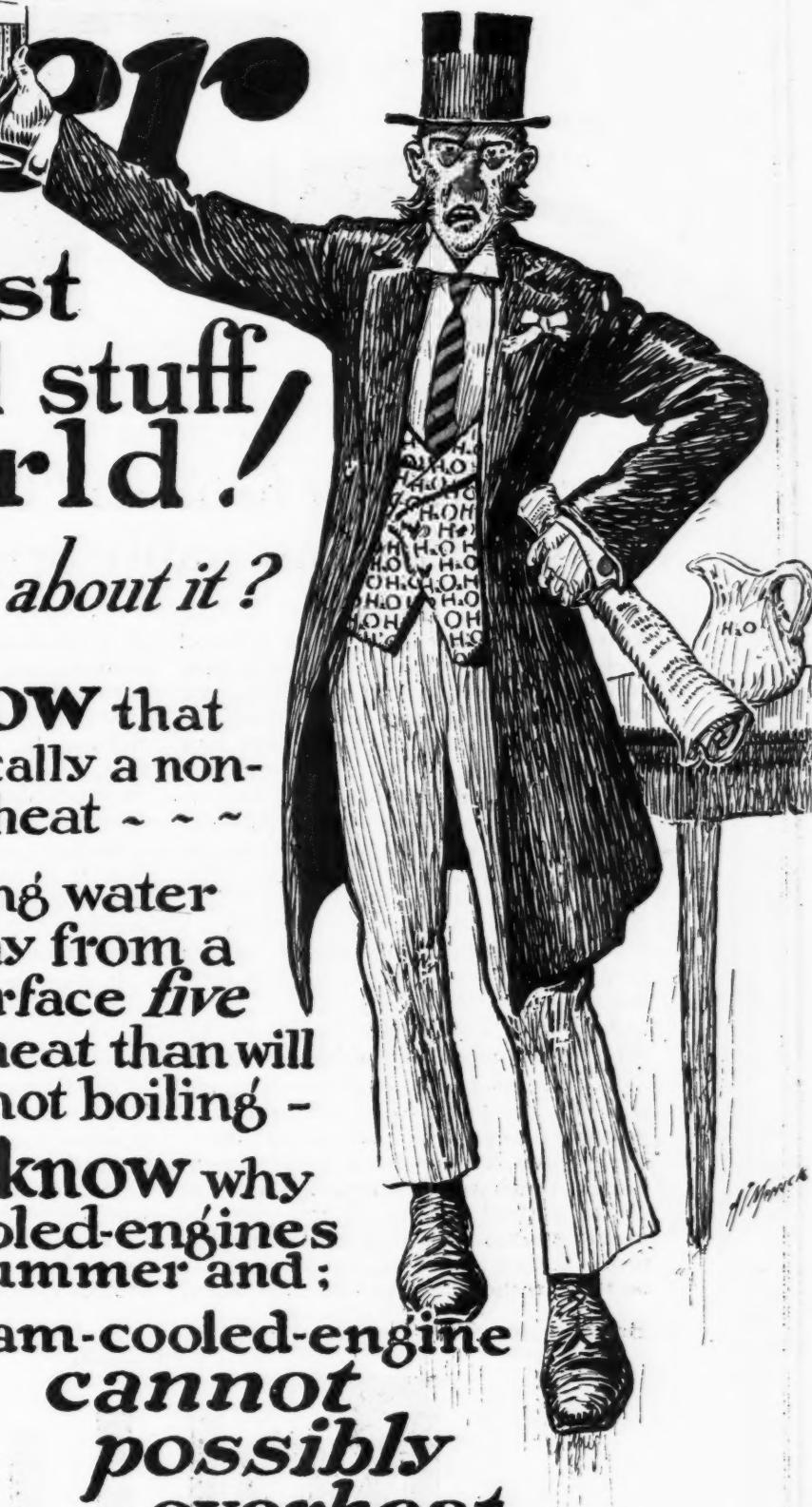
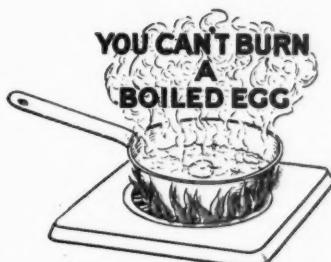
- the most wonderful stuff in the World!

What do you know about it?

If you know that water is practically a non-conductor of heat ~ ~ ~

And that boiling water will carry away from a hot metal surface *five* times more heat than will water that is not boiling -

then you know why water-cooled-engines quit in summer and; why a steam-cooled-engine **cannot possibly overheat**



RUSHMORE LABORATORY- PLAINFIELD-NEW JERSEY



Everywhere you hear it: "Give us a smart, long-lived, reasonably priced small car"

YESTERDAY, in the light of its best knowledge, motor engineering decreed weight, long wheelbase, multi-cylinders, in order to produce road stability, ease of riding, power and speed. And the penalty these exacted was heavy first cost and high upkeep.

The man of means is finding his big, heavy car a handicap. It is a chore to drive it in town. Glutted traffic hampers him. Eight, ten, twelve miles to the gallon has become an operating burden. His sons and daughters, starting life on their own hook, cannot afford the big car, and the car built-to-a-price does not appeal to them.

And now comes the Rollin to fill this gap in motoring requirements.

In the development of airplane engines in the last two years of the war, motor engineers learned more about gas engines, compression, combustion, power, mechanical fineness, economy of fuel and oil than in all the years of motor engineering that had gone before. Today, motoring America stands on the threshold of a new motor-car era.

The Rollin is an engineering accomplishment that begs pardon of nothing running on four wheels. There is no car made at any price which contains any material which is superior to the Rollin. In mechanical precision, design, assemblage, the Rollin is superbly engineered. In every sense, it is a car that will avoid the repair shop.

Its lines are low, graceful and sweeping. It is powered with an engine of surprisingly flexible smoothness. Amazing swiftness on the open road and a veritable hunger for hills.

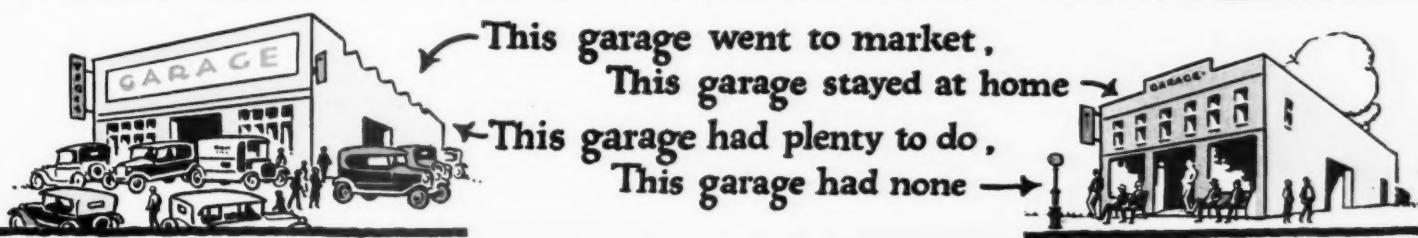
It slips in and out of traffic with the sleekness of a cat. Its four-wheel brakes stop it definitely with unconscious effort. It parks in the minimum of space.

The Rollin engine, designed by Rollin H. White, is of the powerful, economical, European type. It is good for a hundred-thousand miles. It will give 25 to 30 miles to the gallon. It is a car you will be proud to sell. There is still some desirable territory in this section for dealers of Rollin calibre. The Rollin Motors Company, Cleveland, Ohio.

Brougham, \$1325 Coupe, \$1325 Sedan, \$1455 Phaeton, \$1155
(f. o. b. Cleveland)

ROLLIN

Trade Mark



Go after your market for re-lining business

"Dollars and Sense in Brake Lining" tells how

BRAKE LINING business is all around you. It is in the home garages of your town. It drives by your place. It stops at your curb pump for gas.

The trick is to get it on the floor of your garage. Johns-Manville will help you do this.

There are many ways to ask 'em to re-line—wall hangers, booklets, signs and window displays. Johns-Manville will provide all these.

But do not be satisfied merely with getting the motorists who come near your garage. Reach out into their homes with local newspaper advertisements and postcards, telling them that you are a brake specialist, with efficient, up-to-date machinery for re-lining their brakes quickly and safely.

Johns-Manville has prepared a complete brake lining campaign—by letters—by postcards—by hand-bills—for the newspapers—broadcasting the news that you are prepared to render exceptional brake service.

It will pay you to follow the suggestions in "Dollars and Sense."

If you want to increase your business and profits in re-lining business, write for a copy.



Get a supply of these postcards from Johns-Manville—Free!

Remember this!

When you once get a prospect thinking about having his brakes re-lined—one of the best arguments you can use to clinch the business, is the fact that you re-line with Johns-Manville Asbestos Brake Lining.



The man at your curb pump can be your best brake lining salesman

JOHNS-MANVILLE will help you

There's profit in every one of these!

ONE big advantage you have in stocking the complete Johns-Manville line is that every car owner who comes into your showroom is a potential customer for several items.

In other words the line increases your sales opportunity six-fold.

Dealers, appreciating this and also the prestige that the name Johns-Manville gives to a product, have grouped these six specialties together in their displays.

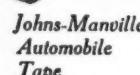
Johns-Manville makes no evenly competitive products—each must have a distinct, exclusive engineering advantage before it is entitled to a place in the line.

When you sell any of these products you sell not only added service, but added economy.

And you sell the reputation of Johns-Manville for fifty years of dependable workmanship.

JOHNS-MANVILLE ASBESTOS BRAKE LINING Clutch Facings, Packings, etc.

Johns-Manville
Automobile Tape



JOHNS-MANVILLE Inc.

292 Madison Avenue, at 41st Street, New York City
Branches in 62 Large Cities

For Canada: CAN. JOHNS-MANVILLE CO., Ltd., Toronto



Johns-Manville
Asbestos
Brake Lining



Johns-Manville
Seigelite
Sheet Packing



Johns-Manville
Automotive
Service
Sheet Packing

Rickenbacker

A • CAR • WORTHY • OF • ITS • NAME

“Beautiful”

Announcing the New 4-Door Coach-Brougham

Beautiful—is the word which will come spontaneously to your lips when you first gaze upon this new Coach-Brougham now announced and ready for delivery.

Rickenbacker was (and still is) first to offer a 4-door Coach-Brougham.

This model has been a tremendous success.

Demand has been overwhelming.

Fundamentally this Rickenbacker idea was right—unanimous acclaim proved that.

Now comes the new model, which in all respects is the same—but refined, perfected.

Here is a Coach-Brougham which is truly beautiful.

Here is a triumph in body design.

Here is beauty of line—the effect of a custom-built body at a price made possible only by volume production.

Here is an achievement in coach craft—here is art combined with science.

Here is luxury at an amazingly low price.

Mounted on that identical “Six” chassis with which “Cannon Ball” Baker has made so many trans-continental and cross-country records during the past six months, this new Rickenbacker is amazing in performance.

And now, it is as beautiful to look upon as it is wonderful in action.

Possesses all the Rickenbacker features, of course—those features which the Rickenbacker incorporates today, which are two years at least in advance.

Tandem fly wheels; double depth frame; “cradle springs”; air cleaner; dilution eliminator; ball bearing steering; balloon tires and 4-wheel brakes.

Here is the most advanced car of its time—both as to chassis and body.

See this new 4-door Coach-Brougham.

It's a rare example of harmonious contrasts—each line seems to complement each curve.

“Beautiful!”—the one word expresses it all.

If you are interested, write the sales department—in strict confidence of course.

Rickenbacker Motor Company

Detroit, Michigan

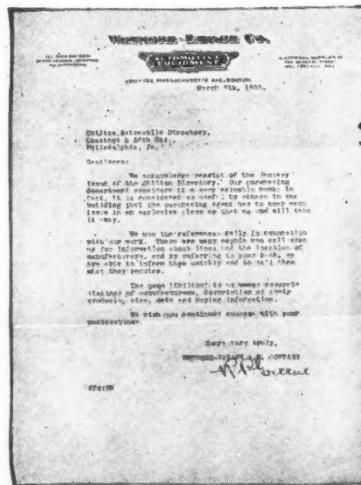
Famous “Six” Prices

<i>Phaeton</i>	- - - - -	\$1495
<i>Coach-Brougham</i>	- - - - -	1595
<i>Roadster</i>	- - - - -	1595
<i>DeLuxe Coupe</i>	- - - - -	1995
<i>Special Sedan</i>	- - - - -	1795



Vertical “Eight” Prices

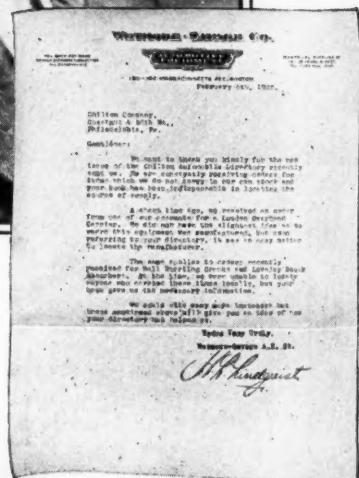
<i>Phaeton</i>	- - - - -	1995
<i>Brougham</i>	- - - - -	1995
<i>Roadster</i>	- - - - -	1995
<i>Coupe-Roadster</i>	- - - - -	2095
<i>Sedan</i>	- - - - -	2195



**Mr. R. P. Greene
Manager
Wetmore-Savage
A. E. Co.**



**Mr. H. L. Lindquist
Purchasing Dept.
Wetmore-Savage
A. E. Co.**



We are constantly receiving orders for items which we do not carry in our own stock and your book has been indispensable in locating the source of supply."

—writes the Wetmore-Savage Co., one of the largest Automotive Jobbing concerns in New England.

"Only the other day," they write, "we had an order from one of our customers for a..... We did not have the slightest idea where this equipment was manufactured, but upon referring to your Directory, it was an easy matter to locate the manufacturer."

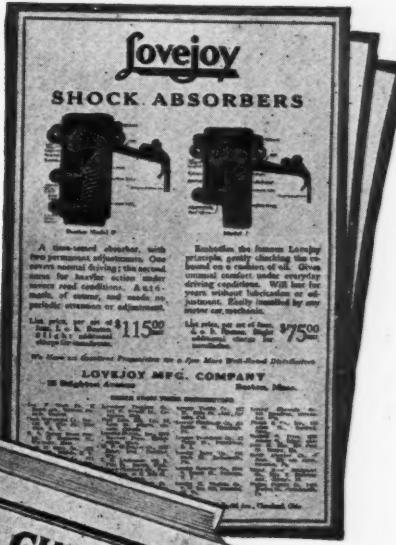
Thousands of users of the Chilton Directory who make up the Wholesale, Retail and Servicing Branches of the Industry, could tell of similar cases where this buying guide has enabled them to save time and often to make sales which otherwise might have been lost.

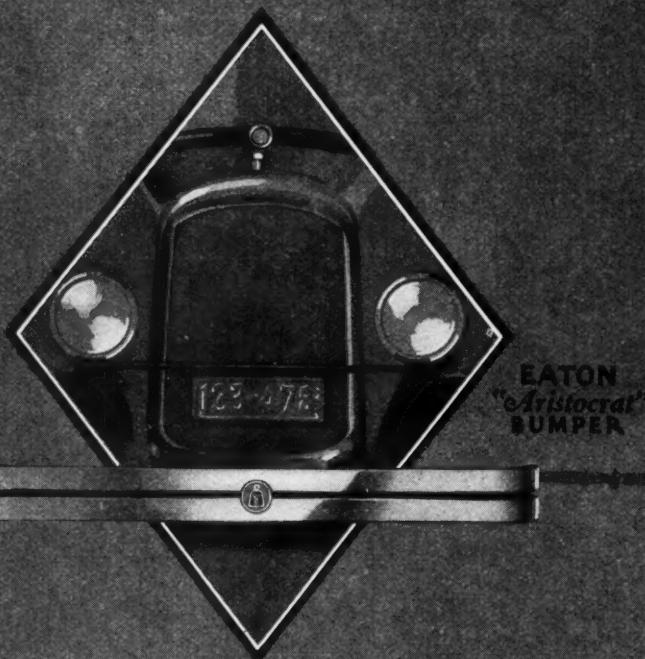
CHILTON AUTOMOBILE DIRECTORY

Makes It Easy to Buy



Several hundred automotive manufacturers publish informative advertising in the Chilton Directory to make buying easy for their trade.





EATON BUMPERS *With Inherent STRENGTH and BEAUTY*



THE cause of the Eaton Bumper's great and growing popularity—is design fundamentally right.

Design in which maximum protection is inherent—an engineering fact. An Eaton Bumper's spring-like construction not only wards off shocks—it absorbs them.

Design in which the beauty of good taste is also inherent. The Eaton Bumper is classic in its simplicity. Its symmetry harmonizes with the motor cars of today.

Eaton custom-made attachments provide quick and easy installation for any car. Eaton Bumpers fit any car—and they look as though they fit.

THE EATON AXLE & SPRING COMPANY
CLEVELAND, OHIO

The "EATONIAN"
One of the most
popular in the
Eaton line



FREE . . . a book that outlines a big new *idea* for mak- ing more money selling tires

No matter what tires you are *now selling*, no matter *where you're doing business* . . .

Here's a book full of hard facts and ideas for making more net profit than you are making now. It gets right down to cases—without any fancy language—gives figures, names and addresses.

Send for a copy. It's free. You're almost certain to get at least one good, money-making idea.

Address, Box 6227, care of Motor Age.
5 So. Wabash Ave., Chicago, Ill.

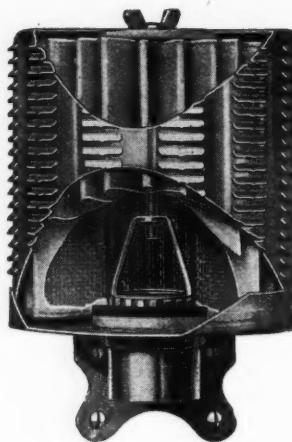
send for it!

Telling Millions about

99 $\frac{9}{10}$ PROTECTOMOTOR 99 $\frac{9}{10}$
.EFFICIENT REG. U. S. PAT. OFF. Perfect Positive Protection .EFFICIENT

is selling Protectomotors to thousands
of new car buyers and owners

Protectomotor is more than an air cleaner — it is an AIR FILTER 99 9/10 Efficient at all speeds.



Mechanical cleaners are not adequate. Air must be filtered to remove all the dirt. Protectomotor alone does this.

All you have to do to sell a Protectomotor is to have one on your demonstrator or simply have one on hand to demonstrate.

Protectomotor is a great money maker, and will make more satisfied customers for you.

Write today for dealer's discount, advertising and selling helps.

Staynew Filter Corporation
Rochester, N. Y.

A Motor without a Protectomotor is like a Watch without a Case.

Prest-O-Lite



"Three times the volume of battery business—and still on the increase"

THAT is just what Prest-O-Lite Batteries have meant to the Broadway Tire and Battery Service Co., of Kansas City. Quoting further from their letter:

"We attribute our phenomenal progress to the three outstanding features of Prest-O-Lite. Namely:

A quality product by a quality house; A remarkable price to the customer, and 'Friendly Service'."

Hundreds of battery stations and garages in all parts of the country can vouch for the splendid sales-building qualities of Prest-O-Lite Batteries. Here is a nationally advertised and recognized leader

—a battery approved by the

world's largest electro-chemical research laboratories. Prest-O-Lite Batteries are sold to you direct from the factory. This revolutionary policy of distribution makes the very lowest prices possible. Dealers everywhere enthusiastically speak of rapid turnover and big profits with Prest-O-Lite. Write today for our service station proposition.

The Prest-O-Lite Radio Chart gives you the most convincing radio-battery selling talk ever known. Details on request.

THE PREST-O-LITE CO., INC.
INDIANAPOLIS, IND.
New York San Francisco
In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto, Ont.



Gabriel

Free play is what you must have in a shock-absorbing device if you want the easiest of easy riding. Gabriel developed free play. Only Gabriel has it.

*Write today for the liberal
Gabriel Sales Proposition.*

The Gabriel Snubber Manufacturing Company
1415 East 40th Street, Cleveland, Ohio
Toronto, Canada



Improved Balloon-Type Snubbers

Partial List of
SCHEBLER
PACKAGE OUTFITS

The NEW Schebler Model "S" Carburetor and other leading Schebler Equipments are supplied in convenient, complete packages for the individual make of car as listed below. Accuracy of each carburetor and completeness of package unqualifiedly guaranteed.

Buick	Oakland
Chevrolet	Oldsmobile
Chrysler	Overland
Dodge	Packard
Essex	Peerless
Ford	Reo
Hudson	Reo Speed Wagon
Hupmobile	Rickenbacker
Maxwell	Studebaker
Nash	Willys-Knight
Continental Motors	

Proof!

The NEW Schebler Model "S" Carburetor has already been adopted as standard equipment on the following automobiles.

Apperson-8	Gardner 8
Auburn-8	Kissel 8
Case	Moreland Buses
Chandler	Rajo Heads
Cleveland	Red Ball Trucks
Cole	Reo
Dagmar	Revere
Deusenberg	Roamer
DuPont	Stearns-Knight
Elcar	Wills-St. Claire

**What Is
Exact Carburetion?**

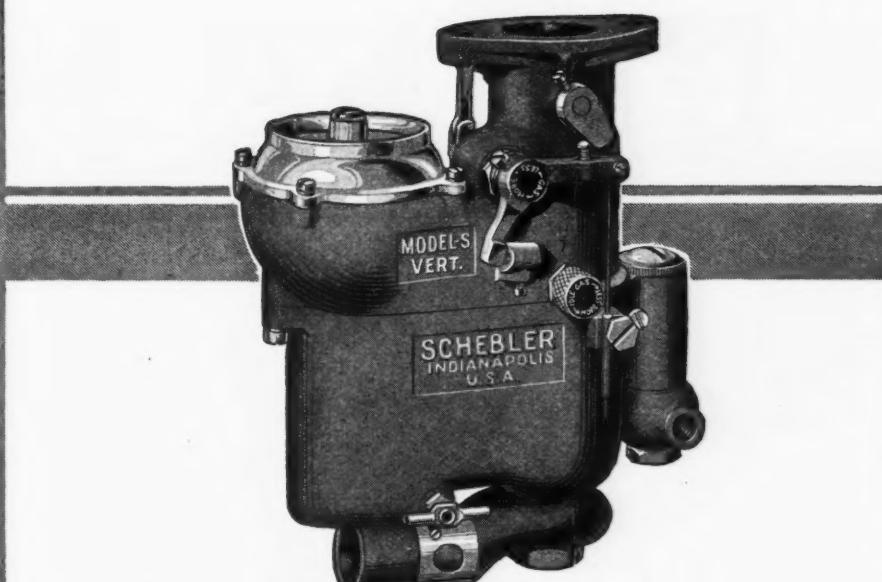
An automobile requires a slight variation in the mixture ratio for different operating requirements.

Exact Carburetion means changing among different mixture ratios *instantly* whenever necessary, for

- Starting
- Acceleration
- Full Power
- Steady Running
- Smooth Idling

The Schebler Model "S" Carburetor provides *exactly* the correct mixture for each condition—and in addition gives a perfectly accurate dash control for the whole range of mixtures required from starting a cold engine until it is warmed up.

And it makes a great difference in performance and gasoline economy.



**Make Sales "Stick"
with exact carburetion**

EXACT carburetion improves automobile performance strikingly. Frequently a doubtful sale is settled with the *exact* carburetion of the NEW Schebler Model "S" Carburetor. Frequently a half-disappointed buyer is made a delighted booster simply by providing him with this *exact* carburetion.

It will pay any automobile dealer to know by experience just what the NEW Schebler Model "S" Carburetor will do for the car he sells. Frequently this personal experience with *exact* carburetion will prove profitable.

Test this highly refined instrument—which in a single year won such striking recognition throughout the automotive industry. See how decidedly it improves starting—acceleration—power—speed—gas economy—idling—everything that makes for real satisfaction with an automobile. Then you will understand when to provide it for your customers.

*Good territories are open for active
distributors. Write us.*

**WHEELER-SCHEBLER CARBURETOR COMPANY
INDIANAPOLIS**

SCHEBLER
*The World's
Finest* **CARBURETORS**

GATES HOSE

"The Standardized Radiator Hose"

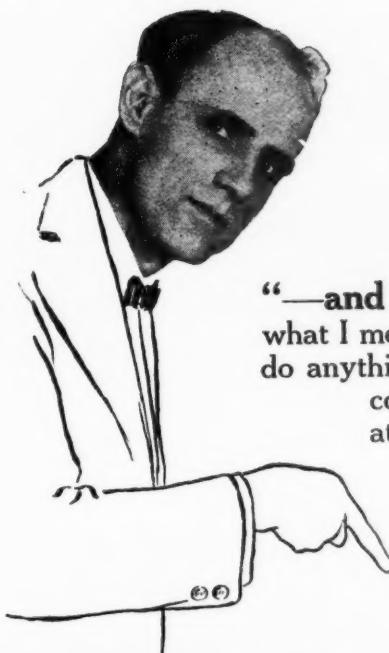


Marked by Inches
Easily Cut to Length

These warm days it takes clean water circulation to keep an engine cool. A pretty good reason for selling your customers the Radiator Hose with the tougher rubber lining—Gates Vulco.

Made by the World's Largest
Manufacturers of Fan Belts

Makes Oval Cylinders Round!



"—and when I say, Round, that's exactly what I mean. It is impossible for the Hall Hone to do anything else, because of its double taper cone control used solid or actuated by a single spring."

Ernie Hall.

**Hall, Cylinder
Hone**

Spring Pressure

or
Solid Pressure
in One Hone
an exclusive
Feature
with the
HALL

**Split
View to
Show Inter-
nal Construction**



**What
the Hall
Patented
Principle Means**

When you put a Hall Hone in an oval cylinder, and tighten the cones, two of the stones are pushed against the cylinder walls at point of smallest diameter. And when the hone begins to revolve, two stones, alternating with the other two stones, do all the cutting, until the diameter of the cylinder becomes uniformly round, because ALL FOUR STONES ARE UNDER EQUAL PRESSURE FROM THE CENTER CONES!

It is mechanically impossible for a Hall Hone to do anything else. No links or connections to give or spring. Any link hole will spring .005 of an inch. Our application is solid from cone to stone carrier. Precision methods of manufacture insure precision results to the thousandth of an inch.

Hall Honed Cylinders mean round rings in round holes; ordinary honed cylinders mean round rings in oval holes, spelling oil passing, compression loss and trouble for you.

**Here's an Easy Way
to Prove It!**

Ask for full particulars regarding Competitive Tests by Auto Manufacturers and Jobbers. Every Garage, Repair Shop and Service Station should have these facts. Send today.

The Hall Mfg. Company
434 Dorr St. Toledo, Ohio

features that sell
the new Chevrolet

for Economical Transportation



ECONOMY — low in price; low in cost of operation, with service available everywhere, Chevrolet is recognized as the foremost car "for Economical Transportation".

These features of outstanding economy appeal to the largest automobile market in the world. And because Chevrolet cars are easy to sell there is provided another kind of economy that lowers overhead, makes quick turnover of capital and brings Chevrolet dealers increased profits.

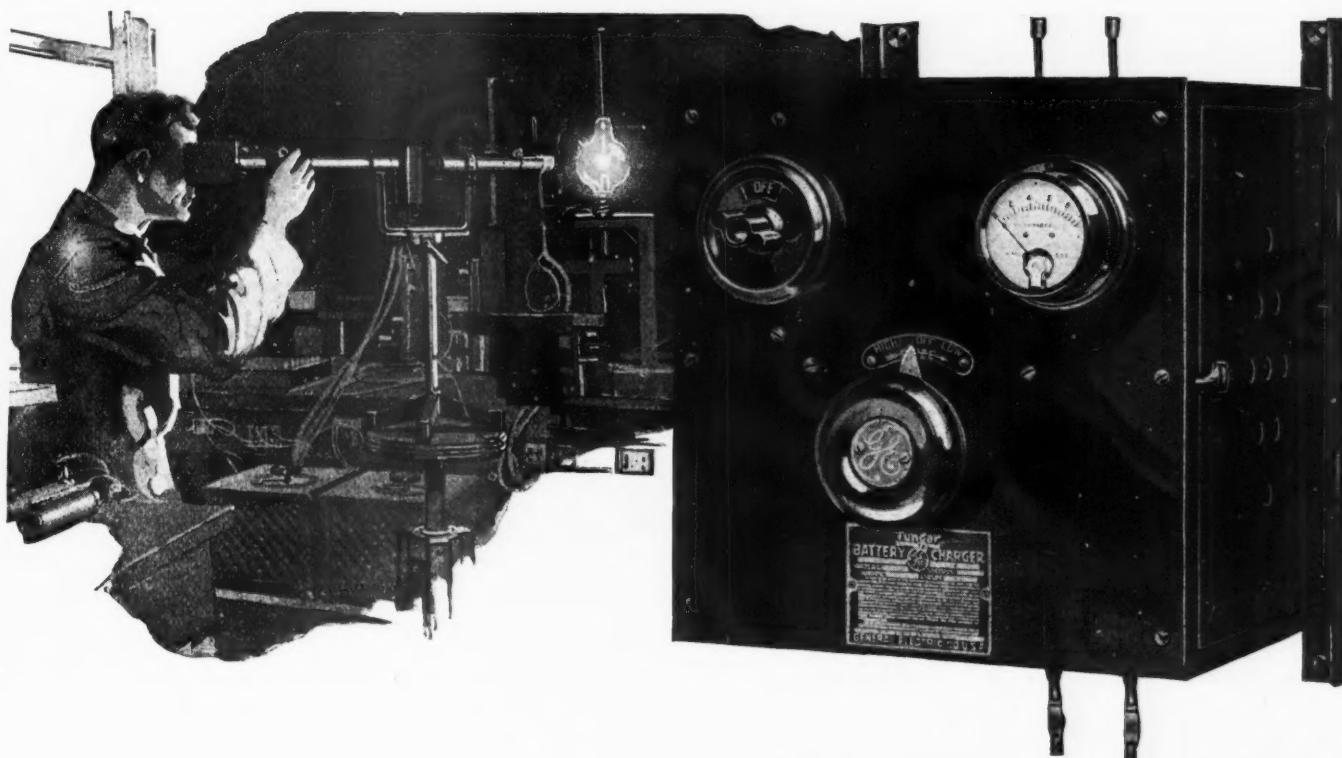
CHEVROLET MOTOR COMPANY

DETROIT, MICH.

DIVISION OF GENERAL MOTORS CORPORATION



QUALITY AT LOW COST



Tungar means the *original!*

Many men say "TUNGAR" when they mean *battery charger*. Some do not realize that it is a trade mark applied only to one make of battery charger—the G-E TUNGAR—the one that dominates the field by its quality.



The Tungar upholds the world-wide fame of General Electric for *quality* and achievement.

Write for the booklet that shows the profit possibilities of the Tungar.

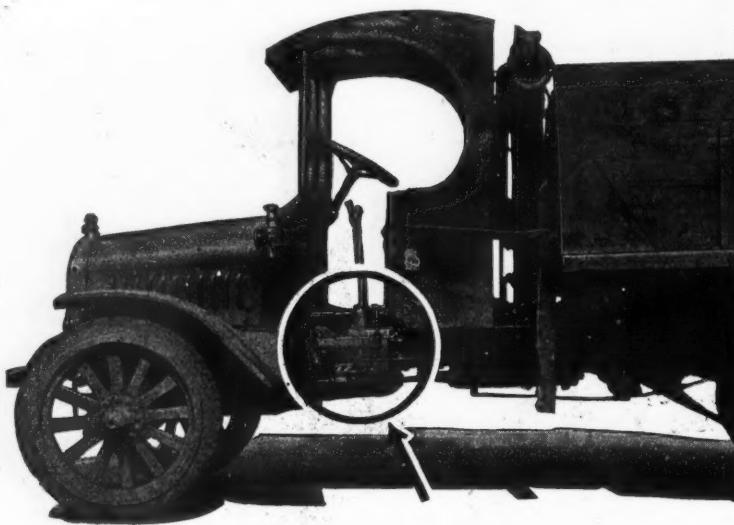
*Merchandise Division
General Electric Company
Bridgeport, Connecticut*

The TUNGAR is the original bulb charger that made charging simple and profitable. Every part of it is made for every other part. Most important—*the transformer is made for the bulb!* That means more perfect performance. It means *lasting* performance. Be sure you get the genuine TUNGAR—developed in the G-E laboratories, and manufactured by the General Electric Company.

HEAVY DUTY
Tungar
 REG. U.S. PAT. OFF.
 BATTERY CHARGER

Tungar—a registered trademark—is found only on the genuine. Look for it on the name plate.

GENERAL ELECTRIC



There's Money for You in Transmission and Clutch Replacements with BROWN-LIPE UNITS

Garage men and vehicle owners are increasingly substituting Brown-Lipe Gear Transmissions and Clutches in trucks, busses and passenger cars. And they all profit by the work.

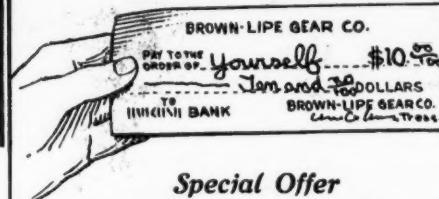
So that garages and car owners, generally, may learn about these substitutions, we are preparing, for free distribution, a series of Service Installation Sheets.

BROWN-LIPE GEAR COMPANY

SYRACUSE, N.Y.



**May We Send You
our check for \$10.00?**



Special Offer

Our check for ten dollars (\$10.00) will be sent to each of the first twenty-five readers of Installation Sheets Nos. 1 and 2 who writes us the full details of a proper substitution made by him with Brown-Lipe Gear units.

The only conditions of this offer are (1) The installation shall have the approval of our engineers, and (2) The owner shall permit us to make and publish a photograph of the vehicle in which the substitution was made.

Each description of an installation accepted by us will be issued as a Service Installation Sheet, and, when requested, we will give credit in the Sheet to the garage or owner doing the work.

These Sheets will describe in detail and illustrate various jobs that have been approved by our engineers and will, we believe, prove helpful to all readers interested in increasing the efficiency of motor vehicles.

Service Installation Sheets Nos. 1 and 2 are now ready. You can secure them by filling in and mailing the attached coupon.



**BROWN-LIPE GEAR CO.
SYRACUSE, N.Y.**

Kindly send me Service Installation Sheets
Nos. 1 and 2.

Name
Company
Street
City State

M A

Van says—"Any make of transmission lining 'll do for me, as long as it's Gilmer."

Handy to Handle Hard to Beat

You could get a Ford transmission lining studded with silver dollars, and yet it wouldn't suit your dealers as well as good Gilmer treated fabric.

What Gilmer puts in is reason and sense, and plenty of hard pounded fabric. What Gilmer keeps out is the hot oil of the transmission case—by treating with the proper compound.

This makes a lining the repairman can handle without taking correspondence courses in Jiu-Jitsu.

Sell Gilmer "46" Transmission Lining. The bigger volume sales will please your road men. Your dealers will be pleased because they save time and trouble and give the customer a high-class job.

Satisfy everybody. Order up a shipment.

L. H. GILMER CO.
Tacony, Philadelphia



Free Displays for Counter or Window

Your salesmen can speed things up by placing our fine display stand where it will bring their dealers increased business. It features Gilmer Fan Belts and Transmission Lining.



TRANSMISSION
LINING

Gilmer
“46”



Don't Miss a Single Copy!

The very next issue may contain an idea that will be worth many times the price of a subscription! But unless you get a copy of next week's issue, the idea will never mean anything to you!

Every week MOTOR AGE has something new to offer its readers! Every week the automotive trade moves forward! And the man who doesn't read and keep up to date is the man who gets left behind!

Don't Miss a Single Copy! You Can't Afford to!

A Year's Subscription to MOTOR AGE Only Costs You \$3.00

And Here's What You Get:

Fifty-two copies of the only weekly maintenance paper published in America.

A weekly news service that is always up to the minute—all the news while it is news.

The right to use the Readers' Clearing House whenever you have a problem that needs personal attention—a service that is alone worth more than the cost of the magazine.

The real facts as to how other men are succeeding in a business just like yours.

Proven ideas from all over the country—new ones every week.

New car descriptions the minute they are released.

Mechanical specifications, prices, and weights of all American cars brought up to date every week.

Subscribe now, and be sure of getting a copy!

MOTOR AGE

5 S. Wabash Ave.,
Chicago, Ill.

IMPORTANT MOTOR AGE is published exclusively for the trade. Subscriptions are accepted only from those actively engaged in our field—so please don't forget to include your business card or letter head with this order.

Gentlemen: Enclosed find \$3.00 to pay for a year's subscription to MOTOR AGE, including all special issues published during the life of my subscription.

Name.....

Street and No.

City..... State.....

Firm Name.....

NOTE—If you are already subscribing to MOTOR AGE, please hand this coupon to a dealer who is not. He'll become a better competitor from reading MOTOR AGE.

What good is a good car — without good tires?



YOU make a business of caring for good cars, keeping them in perfect trim for use. These cars cannot run without tires — why should you not make it your business to see that the right tires go on them?

A complete tire department is an extra service of profit for garage owners and car dealers. You already have a start in the business of your present trade. Other business will follow—and every time a stranger comes in for attention to his tires you have a new prospect for other services and sales.

You can establish a complete tire sales-and-service station without adding an inch to your present store space, while a single mechanic, skilled in the handling of tires, is all that is needed in personnel. Then, with an exclusive sales territory on Lancaster Tires, you can truly establish your store as the center for automobile service of all kinds.

For merchants who specialize in tires only, Lancaster has much to offer. For garage owners, car dealers, etc., it has even more. Write now, so that our representative can call soon.

THE LANCASTER
TIRE AND RUBBER COMPANY
COLUMBUS, OHIO

LANCASTER CORD TIRES





AT LAST! a straight from the shoulder book on cylinder wear

EVERY shop man knows what cylinders that are scored out of round or out of square with the crank shaft mean in the operation of a motor. It means loss of compression, oil pumping, excessive carbon, piston slap, or any number of other things that seriously affect the smooth running qualities of a motor.

Of course we know these things, but does the fellow who drives the car know? He doesn't.

The Storm Book of "Facts" is the first we have ever seen that gives shop men real help in explaining cylinder wear and its ill effects to car owners. "Facts" covers every kind of wear, with charts as clear as the nose on your face.

It's a wonderful book to have around any shop. You'll say that "Facts" is the most valuable book you have ever seen for helping sell your service to the motor public. Send for it.

IT'S FREE

STORM

MANUFACTURING COMPANY, INC.
406A Sixth Avenue, South Minneapolis, Minn.

Send me a copy of "FACTS." If I can show car owners exactly what's happening inside the motor by means of simple charts, it's bound to help my repair business.

NAME
ADDRESS
CITY STATE

GOODRICH-LENHART

Starting - Lighting - Ignition - Radio
—CABLE—

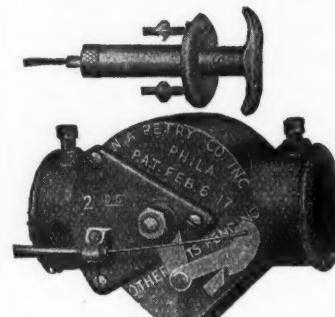
Made of absolutely dependable materials, in standardized sizes that will service practically every car in use. Sold for your convenience in 100 ft. coils neatly boxed and labeled.

Write
for
details



Goodrich-Lenhart Mfg. Co.
Hamburg, Pa.

Not Sold as a Noisemaker



**A Tuning-up
Valve Tells
How the
Cylinders
are Behaving**

It is the only convenient way to check up on the engine.

Boost your Tuning-up Valve sales by stressing their REAL use, get motorists away from the idea of a cut-out as a noise maker and sell them the Petry Tuning-up Valve, scientifically designed for checking-up on the engine.

It will operate smoothly and easily—will not chatter or open by accident—will not develop leaks or rattles. It will give complete satisfaction for the life of a car.

N. A. PETRY COMPANY, INC.
340 N. Randolph St., Philadelphia, Pa.

PACIFIC COAST REPRESENTATIVE
Norman Cowan Co., 451 Rialto Bldg., San Francisco, Calif.

PETRY Tuning Up Valve

Low-cost Transportation
Star  **Cars**

Foresight and Hindsight

The difference between success and failure is frequently a difference in capacity to visualize opportunities and to take advantage of them.

Inability to correctly appraise an opportunity is a common failing. Too late, we see its value and lament our lack of foresight.

Some time in 1926, when the Star dealer in your vicinity is going strong and making big money, you will remark, "I might have had that franchise. How short-sighted I was not to see the money-making possibilities in the Star and Durant line!"

Doubtless there are some who think that when we assert our determination to capture second place in the automobile market we are bluffing or "whistling to keep our courage."

The rapid improvement of our cars, the introduction of better automobile values, our broad and expansive advertising program, a large and rapidly increasing field organization, the shift of public opinion in favor of our products are all evidence leading to but one conclusion—the establishment of the Star Car as the quality leader in the low-priced automobile field.

One thing is certain, other low-priced dealers are going to find it increasingly hard to meet Star competition. Do you want to swim with or against the current?

For complete information on the profit possibilities of the Star and Durant line, write us on your business stationery.



Vice-President

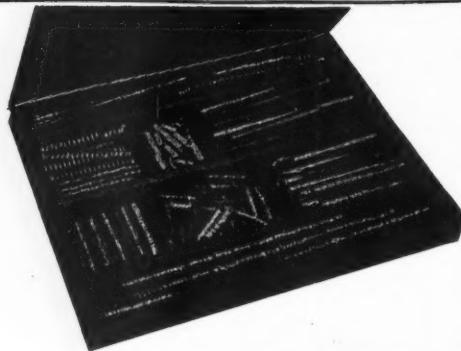
DURANT MOTORS, INC., BROADWAY AT 57th ST., NEW YORK CITY

General Sales Department, 1819 Broadway, New York City

Dealers and Service Stations Throughout the United States and Canada

PLANTS: ELIZABETH, N. J. LANSING, MICH. OAKLAND, CAL. TORONTO, ONT.

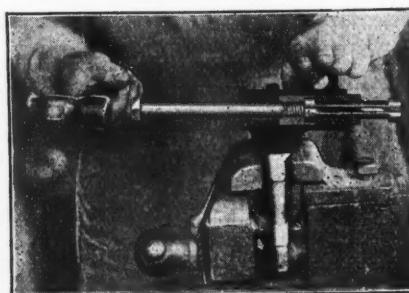
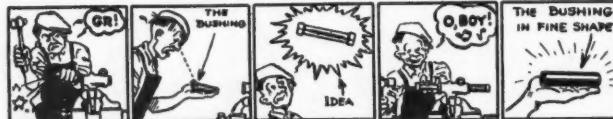
Small Outlay — Big Profits



\$3 50
LIST

PECK GARAGE ASSORTMENT

Earn good money on spring replacements from this PECK Garage Assortment. The most needed sizes in generous quantities. A \$3.50 investment yielding big profits on replacement jobs. You'll like the strong partitioned box included with this set. Mention Jobber when ordering. The Peck Spring Co., Plainville, Conn.



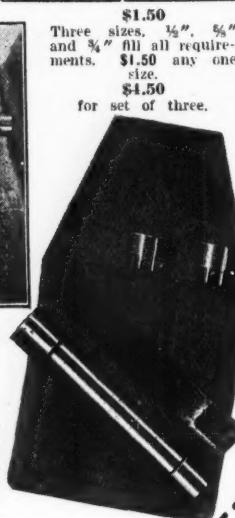
How 500 Garagemen Bought a New Tool on Sight

IN two minutes, we claimed, the new Dieringer Remover would take out the tightest steel or bronze bushing! With a bushing they carried, salesmen demonstrated how it operated. Before the test was actually made on a frozen bushing, garagemen bought—they saw we could remove bushings in LESS time!

For you simply insert the Dieringer Remover, wham it with a hammer and the bushing is out in perfect condition. A money saver and profit maker for garagemen.

Jobbers: Clip and mail this coupon now for our large discounts and full information. Garagemen: Please mention your jobber's name when writing.

DIERINGER
Bushing Remover



E. T. DIERINGER,
Box 282, Bolivar, Ohio
Without obligating me in any way, send
full information and the Dieringer Bushing
Remover.
Name _____
Address _____



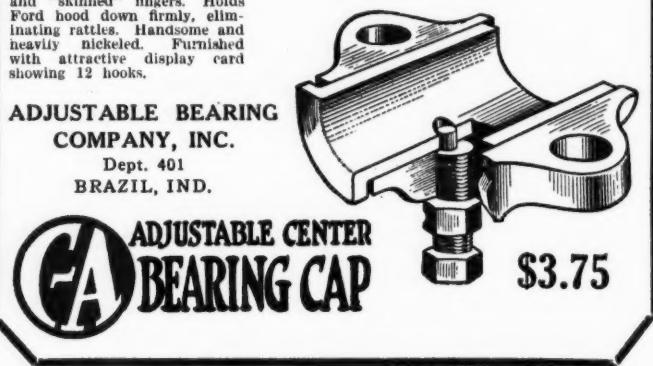
C-A HOOD HOOK FOR FORDS

"Kind to the fingers"—that's what they are saying about the C-A HOOD HOOK FOR FORDS. Can be substituted for the regular Ford hood hook in five minutes. Large, convenient grip allows plenty of finger room. Set at an angle that prevents bruised knuckles and "skinned" fingers. Holds Ford hood down firmly, eliminating rattles. Handsome and heavily nickelated. Furnished with attractive display card showing 12 hooks.

ADJUSTABLE BEARING
COMPANY, INC.
Dept. 401
BRAZIL, IND.

CA ADJUSTABLE CENTER
BEARING CAP

\$3.75



They Searched for YEARS!

Since the time Fords first came into use mechanics have been seeking an easy, convenient way to correct Ford crank-shaft end-play.

Then came the C-A ADJUSTABLE BEARING! Its installation not only delays the development of end-play, but also provides a quick, easy way to correct it when it does develop. Simply drop the oil pan to install or adjust. Replaces the regular center main bearing cap, assuming half the thrust. Eliminates the many evils of end-play: Dragging clutch, worn wrist pins, scored cylinders, chattering bands, magneto out of line, etc.

JOBBERS, DEALERS—Write today for full information on both C-A ADJUSTABLE BEARING and C-A HOOD HOOK.

MOTOR AGE'S FLAT RATE MANUAL

THE most complete Flat Rate information ever offered the trade—originally published in MOTOR AGE of April 30th, 1925—is now available in booklet form at 50 cents a copy.

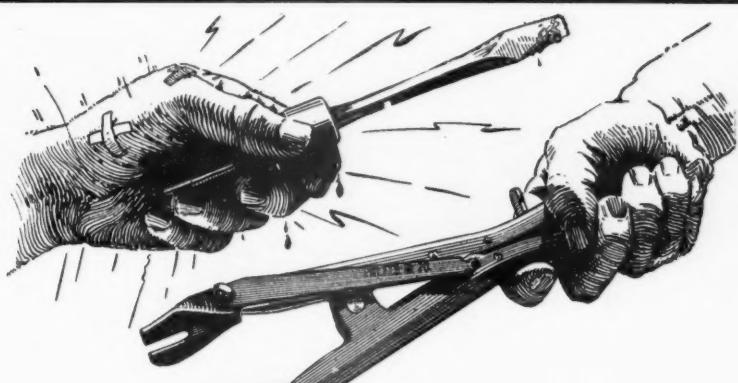
277 Operations and 42 Cars

are covered in this new manual. If you want the latest and best information on the subject, don't be without it. It only costs

50 cents

MOTOR AGE

5 So. Wabash Ave. Chicago, Ill.



How do You go at it?

It's none of our business how you lift valve springs, but if you're still skidding around with the greasy screwdriver method, losing both blood and profits, it's our duty to put you wise to the K-D Valve Spring Lifter! There's nothing new or tricky about K-D. It's as simple as a pair of pliers and just as handy. Simply slip the jaws under a valve spring washer and squeeze the handles. That's all there is to it. The spring comes up to any desired height without a slip or bind, and is locked there until you release it with the patented thumb latch. The worst part of the work is quick and easy when you go at it with a K-D. And the added profit from time saved will pay for this speedy tool in no time.

Here's Why K-D Is Used by Thousands

1. Jaws remain parallel throughout entire lift.
2. Jaws lock automatically at any desired height, giving operator free use of both hands.
3. Pressed steel throughout—Parkerized against rust—practically indestructible.
4. Universal Type with two extra standard jaws fits most L. & T. head motors —Price, \$2.50.

Send This Coupon for the Complete Story

K-D MANUFACTURING COMPANY

Lancaster, Pa.



"C" Type Special

To service Fordson Tractors and Motors with Overhead Valves.
Price \$3.75
Studebaker Special..... 2.50
Special Jaws for Hudson..... 1.00
Rickenbacker..... 1.00
Maxwell..... 1.00
Peerless..... 1.00
Dodge..... 1.00
Chrysler..... 1.00
Flint..... 1.00
Jordan..... 1.00

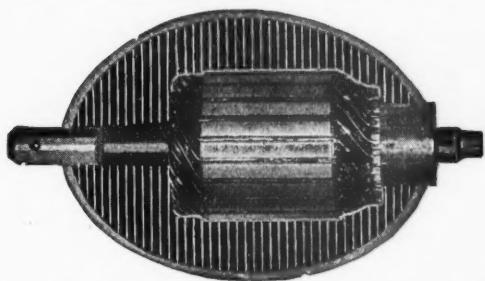
**K-D MFG. CO.,
Lancaster, Pa.**

Send me folder describing K-D Parallel Jaw Valve Spring Lifters.

Name _____

Address _____

My jobber is _____



Rewinding 'em Right!

102 operations, careful inspection, safe packing—we don't take a chance in guaranteeing Fredericks Rewinds for 90 days. So the garageman's profit is safe—repeat business sure. Let us send the price list.

FORD Generator Armatures Rewound.....	\$1.50
FORD Starter Armatures Rewound.....	1.50
ALL OTHER TYPES TWO UNIT Generator Armatures Rewound.....	3.25
ALL OTHER TYPES TWO-UNIT Starter Armatures Rewound.....	3.25
ALL TYPES MOTOR GENERATOR Armatures Rewound.....	8.00

GUARANTEED to give the same satisfaction as new armatures.

The H. M. Fredericks Co., Lock Haven, Pa.

FREDERICKS
Rewinding Service

DUS-PRUF

The only metal automobile trunk which will not RUMBLE

NOTE our method in the illustration showing how the upper edge of the body of the trunk enters a rubber channel preventing a metal to metal contact at the corners.



DUS-PRUF trunks sell themselves

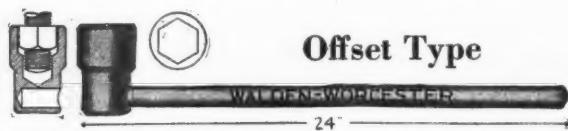
Models to fit practically any of the well known makes of cars

MANUFACTURED ONLY BY

GENERAL DISTRIBUTING CO.

Main Office—3-131 General Motors Bldg., Detroit, Mich.

Heavy Duty Socket Wrenches



Offset Type

24"

Extra strong construction with extra depth sockets—heat treated.

Plain lacquer finish—twenty-eight standard sizes.

Ask for Catalog No. 400.



WALDEN - WORCESTER
INCORPORATED
WORCESTER, MASS.

BIG MONEY IN THIS SERVICE

Dealers and shops make big money through the control of a franchise which entitles them to the exclusive use of the patented "KLEAN RITE" system of washing and polishing automobiles.

This system has turned a job into an impressive, highly profitable business.

Write for full particulars.

Klean-Rite Auto Laundry Company
1710 East 75th St.
Chicago, Ill.



UNIVERSAL HOSE CLAMP

Adjustable. Two sizes will clamp any hose of any diameter. Made from cold rolled steel out of wire. No rough edges to cut hose. Put on in less than a minute. Everlastingly leak-proof. Order Universal Hose Clamps. Trademark on every clamp and carton. Get them from your jobber—or write us.

UNIVERSAL INDUSTRIAL CORP.

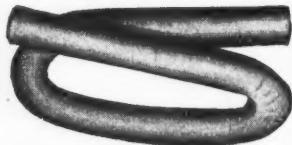
Hackensack, N. J.

MONOGRAM ORIGINAL SELF LOCKING RADIATOR CAP

THE KINGSLEY-MILLER CO.
Successors to
(General Automotive Corporation, Chicago)
600 West Jackson Boulevard Chicago

NO TOOLS—It's Self-Closing

Repair Link for Broken Cross Chains



A Flower City Self-Closing Link attached with fingers to loose ends of broken chain closes and locks on first turn of wheel. Stops clanking—saves fender—low-priced. Box of 10 Links retails for 25 cents.

Write for samples and discounts.
Distributors wanted.
FLOWER CITY SPECIALTY CO.
Rochester, N. Y.



Better Original Entry Systems Stop Your Loss of Profit. Let Amsaboco Products help you—made by American Sales Book Co., Ltd., the largest manufacturer in the world of sales check books and other profit saving systems. Write today for information with no obligation.

American Sales Book Company, Limited Elmira, New York

Branch Offices in all large cities.



Lorentzen Headlight Kontrol
AN AUTOMOTIVE NECESSITY THAT SELLS

LORENTZEN HEADLIGHT KONTROL, INC.
60 Grand St., New York City.

MORRISON

Automatic Double Range

Worm Drive JACKS

Special model
for Balloons

Can't Slip or Tilt



Flexible steel "Sure Hold" cap prevents dangerous slipping. Long folding handle (36 to 72 in.) operates from standing position. Gets under overhanging bodies. Easy to work. Few turns and it's up. Built in 11 sizes for all service requirements up to 8 tons. Furnished as standard equipment on fine passenger cars, trucks, buses and Fire Apparatus for past 4 years. The Jack for YOUR shop. Write for sample for test.

THE WOODS ENGINEERING CO., Alliance, Ohio

2008 (Sentry D 25) Bumper



CORRECT DESIGN

There is a difference in bumpers. Find out why WEEDS are better—why they sell quicker.

Write for literature.
American Chain Company, Inc.
Bridgeport Conn.

WEED BUMPERS



UNITED STATES Portable Electric DRILLS

Built by the oldest maker of Portable Electric Drills in the World.

Ask for Catalog 105

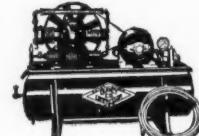
THE UNITED STATES ELECTRICAL TOOL CO.
Cincinnati, Ohio, U. S. A.

Model G-16

Quincy Silent Air Master

Manufactured by

Quincy Compressor Co.



Name Formerly Wall Pump & Compressor Co.
217 Maine Street, Quincy, Ill., U. S. A.

TIMKEN Tapered ROLLER BEARINGS

CURTIS

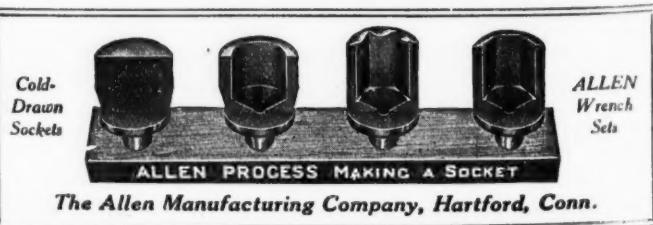
AIR COMPRESSORS-HOISTS-TROLLEYS-CRANES

ST LOUIS

C. P. McH. Co.

Curtis Pneumatic
Machinery Co.

1527 Kienlen Ave.
St. Louis, Mo.



Cold-
Drawn
Sockets



ALLEN
Wrench
Sets

ALLEN PROCESS MAKING A SOCKET

The Allen Manufacturing Company, Hartford, Conn.

KLEENKAR SHOP COVERS

Build Business

More than any other one service, owners appreciate getting their cars back from the shop clean.

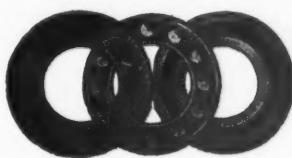
It makes them come again.

*Write for
KLEENKAR
Samples.*



AUTOMOTIVE FABRIC EQUIPMENT CO.
Originators

703 Cass St., Milwaukee, Wis.



STAR BALL RETAINERS for Thrust, Magneto and Cup and Cone Types of Bearings—

The Bearings Company of America
Lancaster, Penna.

Western Sales Office,
1012 Ford Bldg., Detroit, Mich.

How much do you know about Automobile Electrical Systems?

"Automobile Electrical Systems"

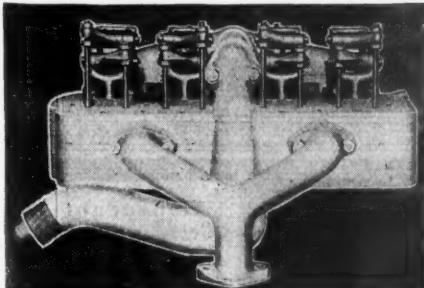
Send \$3.00 for Automobile Electrical Systems by D. P. Morton, examine the book, and if not satisfied return in 10 days and we will refund your money.

This book gives a complete analysis of all systems now used on motor cars, with 200 wiring diagrams and special attention given to trouble shooting and repairs. Not an elementary book, but written for the man who understands fundamental principles of electricity. 39 tables—603 pages—379 figures covering the subject in a clear, understandable way for the man who wants to become expert. Only a limited number of copies left. Take advantage of our special ten-day offer.

MOTOR AGE
Book Dept.
5 S. Wabash Ave. Chicago, Ill.

A

ROOF 16 OVERHEAD VALVE EQUIPMENT For Ford and Dodge Motors ROOF 8 VALVE HEAD FOR FORD MOTOR



Jobbers—Dealers—Consumers—Write Us.
THE LAUREL MOTORS CORPORATION, ANDERSON, INDIANA

**Stupendous Power—
Lightning Speed**
Ford racing cars with Roof Equipment are rivals on mile and one half mile tracks of the highest priced racing cars. Doubles the pulling power of the Ford or Dodge pleasure car or truck. Hill climbing and general road work beyond wildest dreams of the owner. Complete—ready for installation—no machine work necessary.
We are headquarters for all speed equipment. No matter what you want, write us. Racing quality—lowest prices. A postal card brings you complete list of our specialties.



THE GENUINE
YA-VA-PAI
ONYX GEAR SHIFT
BALL

Has a Powerful Sales Appeal

Selling YAVAPAI has come to be one of the easiest things dealers do. A display on the counter puts them over. They go on sight.

YAVAPAI Onyx Gear Shift Balls look clean. Buyers want to touch them. They feel good to the hand. Besides they beautify the driving compartment of any car.

Manufactured with standard bushings. Reducers furnished to fit all cars. Price only \$2 in the U. S. A.

Order from your jobber or write us direct giving his name.

Yavapai Onyx Mining Corp.

Automotive Division

Dubuque, Iowa

U. S. A.

FOLLETT'S NEW MODEL TIME STAMP

accounts for every labor minute

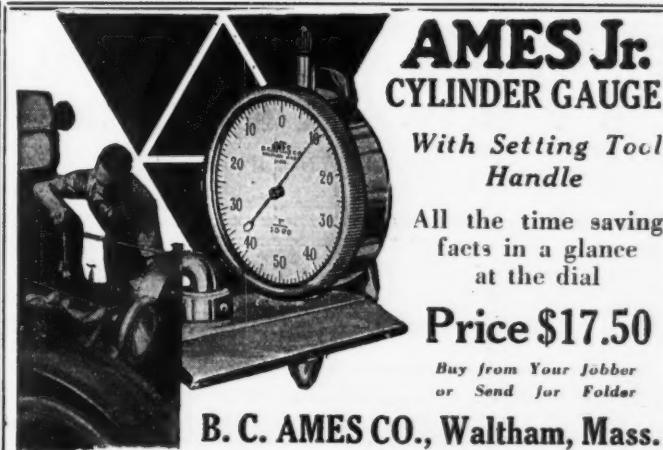
Prints the year, month, day, hour, minute, A. M. or P. M. at the exact moment the plunger is pressed—like this, for example:

NOV 19 1920 4 31 PM

Tells when a job is started—and when it is finished. There can be no dispute over the time charge.

Absolutely automatic—except for winding. Every machine guaranteed.

Follett Time Recording Co., 217 High Street, Newark, N. J.
"Established Since 1904"



AMES Jr. CYLINDER GAUGE

*With Setting Tool
Handle*

All the time saving facts in a glance at the dial

Price \$17.50

*Buy from Your Jobber
or Send for Folder*

B. C. AMES CO., Waltham, Mass.

CROSLEY

RADIO CATALOG FREE
Describes fully the complete line of radio frequency sets, regenerative sets (licensed under Armstrong Patent No. 1,113,149) and parts.
THE CROSLEY RADIO CORPORATION
Powel Crosley, Jr., President 6533 Sassafras St., Cincinnati, O.

The Adams Adjustable Foot Rest
Adjusts comfortably and easily to most convenient height for any driver's leg. Foot lies in normal restful, uncramped, safe position. Big, fast seller. Senior, \$3.50. Junior, \$1.25. Ask your jobber.

Adams Mfg. Co.
Galesburg, Ill.

HIGH LUSTRE FINISH
For Everything Varnished or Enamored Automobiles, Pianos, Furniture Recommended for DUCO
H. L. FEASEL'S LABORATORY
9-11-13 Desbrosses St., New York, N. Y.

BRUNNER
AIR COMPRESSORS
FREE Write for the Book "AIR PROFITS"
describing many new uses for compressed air. Shows how to make an air compressor earn greater profits.
BRUNNER MFG. CO.
UTICA NEW YORK

GET TURNER'S SPECIAL OFFER!
It will show you why Turner dealers are so enthusiastic. Get the details of the special offer on this fast selling device. It will obligate you in no way. Write TODAY

TURNER
2 IN 1 TIMER
TURNER MFG. CO.
DEPT. K., KOKOMO, IND.

No Wonder They Sell Fast
Tasco Gasoline Gauge takes the place of the filler cap and saves the mean job of "measuring" the gas in the tank. For Fords, Chevrolets and Overlanders.
THE AKRON-SELLER CO., Akron, Ohio, U. S. A.

TP TRADE MARK
Thompson Silcrome Valves
—also, King Bolts, Spring Bolts, Tie-Rod Bolts, Bushings, Tappets, and Starting Cranks. Supplied for replacement by selected jobbers.
Thompson Products
CLEVELAND, OHIO

Cushers
CHICAGO ROLLER SKATE CO.
Manufacturers of Screw Machine and Automotive Products
Cushers Sales Dep't, Fulton-Dean Co.
332 South Michigan Avenue, Chicago

20c ea. (Retail)
DAVENTED
Write for Attractive Discounts

APEX GUARANTEED
TRADE MARK
MADE IN U.S.A.
FOR AUTOMOBILE AND PLANE
MANUFACTURED BY THE
THOMSON MFG. CO.
Dept. C Peoria, Ill.

Always Insist Upon Genuine Apex Innerings
Most good Jobbers stock them. If it isn't an Apex—it isn't an innering.
THOMSON MFG. CO.
Dept. C Peoria, Ill.

Pump Shaft Leaks Permanently Repaired
Conneaut Plastic Metallic Packing makes a smooth metal bearing for pump shafts. Practically frictionless. Adjustable like a bearing. In one and 5 lb. cans. A really wonderful packing producing exceptional results.
Conneaut Packing Co., Conneaut, Ohio

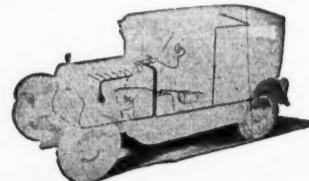
BRADLEY
Auto Trunks & Racks
Simple in design. Light in weight. Easy to install. No drilling or fitting. For Buick, Hudson, Essex, Chevrolet, Maxwell, Chrysler, Reo, Dodge, Rollins, Hupmobile, Studebaker, Willys-Knight and Overland.
Bradley Motor Products Co.
Fostoria, Ohio



ZENITH
CARBURETOR
Zenith - Detroit Corporation, Detroit, Mich.

Pump and Tank Headquarters
S. F. BOWSER & CO. Inc.
FORT WAYNE, IND.

Packard
Cable
The Packard Electric Co.
Warren, Ohio



Bumpers, tempered and nickel-plated by our exclusive processes. Strong brackets, fit all bumpers.

GEMCO MFG. CO.
760 So. Pierce St.
Milwaukee, Wis.

Gemco BUMPERS

Write for catalog

The Cooper
CUT-OUT
ENGINE TESTER AND CARBON OUTLET VALVE

Dependable. Certain. Easily installed. A big seller all the year round.



**Visible Night and Day
SAFE-T-STAT
ENGINE HEAT INDICATOR**

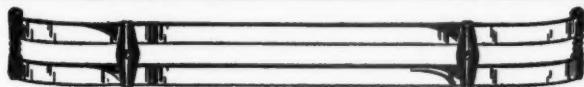
Always Accurate Theft-Proof

The Safe-T-Stat Co., Inc.
79-85 Bridge Street Brooklyn, New York

KISSEL
CUSTOM BUILT

KISSEL MOTOR CAR CO., Hartford, Wis.

The Kissel Dealer does not meet competition. He makes others meet it.



Spring-steel, Oil-tempered Bumpers in Six Complete Styles. Guaranteed Satisfactory Attaching Arms for all Leading Makes of Cars.

We invite comparison in appearance, quality and price.
THE BELLEVUE MANUFACTURING CO., Bellevue, Ohio

Dealers
Every
Where

INSIST UPON



Millions
Now
In Use

SILENT TIMING GEARS and CHAINS

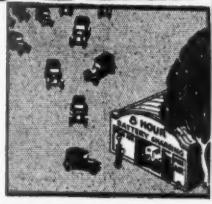
Dalton & Balch, Inc. 2333 Michigan Ave., Chicago

YOU CAN CLEAR \$150 to \$300 MONTHLY PROFITS

HB Users everywhere are adding \$150 to \$300 monthly to their income with HB Constant Potential One-Day Battery Charging. Outfit comes complete with all necessary equipment for only \$35 cash. Small monthly payments. Free trial or money-back guarantee. Write for free bulletin 27.

HOBART BROTHERS COMPANY
Box A 254, Troy, Ohio

Profits Easily Carry Small Monthly Payments



G-H Tension Rings of the finest steel, properly tempered, not only make but keep old motors running like new—Stop piston, slap and oil pumping. Real TENSION Rings—not just inner rings.

G-H Tension Ring Co., Inc.
Howard St. and Armory Pl.
Baltimore, Md.



Built to Car-Maker's
Specifications

James Motor Valve Company
1350 Maple Ave., Detroit, Mich.

ORIGINAL BOSCH units bear the full name, Robert Bosch, and the trade mark shown at left. These are the identifications of Bosch quality—famous since 1887.

The Original
Bosch



Franchise details for selling ORIGINAL BOSCH Automotive Equipment will be sent to any Distributor, Dealer or Service Station on request.

ROBERT BOSCH MAGNETO CO., Inc.
109 West 64th Street New York, N. Y.

PARTS

AUTO PARTS

Save 20 to 80 per cent. Send us your old parts, we can duplicate them. We have everything for the car or truck and parts for any car ever made. We are the largest car wreckers and replacement parts house in the World. Ask for our free catalog and monthly bargains lists.

Warshawsky & Co., Inc.
1915-31 S. State St., Dept. A. W.,
Chicago, Ill.

**HOUSE OF A MILLION
AUTO PARTS**

The largest stock of new and used car and truck parts in the world. We have everything. Always mention model and serial number in order. Write us. All inquiries answered promptly.

DOUGLAS AUTO PARTS CO., INC.
2003-5-7-9 South State St., Chicago, Ill.

AUTO PARTS

SAVES 50% TO 75% ON ALL CARS
New and Used Gears—Springs and Axles—Cylinders—Motors—Rear Systems, etc. Wire or Write

INDIANA AUTO PARTS CO.
316-18 NO. ILLINOIS ST. INDIANAPOLIS, IND.
LARGEST CAR WRECKERS IN INDIANA

PARTS

DOWMETAL PISTONS

Lighter, stronger, and longer wearing than aluminum or iron. Can be fitted with bronze bushings in the wrist pin holes same as in iron pistons. Dowmetal has no permanent growth. The expansion is little more than iron.

SEND FOR PARTICULARS

LAMMERT & MANN CO.
Cylinder and Crankshaft Grinding
215-21 N. Wood St. CHICAGO Phone West 4918

PATENTS & PATENT ATTORNEYS

Attorney-at-Law and Solicitor of Patents

C. L. PARKER

Formerly Member Examining Corps, United States Patent Office

American and foreign Patents secured. Searches made to determine patentability and validity. Patent suits conducted. Pamphlet of instruction sent upon request.

McGill Building, WASHINGTON, D. C.

PATENTS

Secured, Trade-Marks and Copyrights Registered
Prompt service. Highest references. Established 1864.
Milo B. Stevens & Co., Registered Patent Attorneys
Offices: 639 F St., Washington, D. C.
10 Monadnock Block, Chicago, Ill.

SALES MEN WANTED TO SELL INCANDESCENT AUTO
ering every state and foreign countries desires marketable
article on royalty basis. During past 5 years have paid to
patent owners over \$100,000 in royalty on articles we have
marketed. Address Box 6229, Motor Age, 5 S. Wabash
Ave., Chicago, Ill.

FOR SALE

NEW HUDSON COACH BODIES—Taken off new 1925 Hudsons where we mounted custom made Coupe bodies. Auto Trunk Co., Oshkosh, Wis.

SITUATIONS WANTED

Man who has had thirteen years' experience in the automobile game, desires connection with manufacturer of special tools or accessories, for territory in Central Ohio. Address Box 6230, Motor Age, 5 S. Wabash Ave., Chicago, Ill.

A real salesman wants to hear from accessory and equipment manufacturers that have any available territory open I am well acquainted with middle west jobbers. Address Wall, 761 N. Tremont Ave., Indianapolis, Indiana.

HELP WANTED

Well established bumper manufacturer has openings for several high grade salesmen in various territories. Give details of experience. Address Box 6231, Motor Age, 5 S. Wabash Ave., Chicago, Ill.

SALESMAN WANTED TO SELL INCANDESCENT AUTO LAMPS ON A COMMISSION BASIS. GOOD OPPORTUNITY. WRITE BOX 6232, MOTOR AGE, 5 S. WABASH AVE., CHICAGO, ILL.

for -

Gasket Paste
Battery Terminals
Hose Connections
Spark-Plug Threads

Door Squeaks
Manifold Paint
Any Wearing Point

*and -
on spring leaves also*



KEY Graphite Paste

Taken all in all, there are more sales possibilities for KEY Graphite Paste than almost any other product you ever carry in stock.

Read over the list above. Most of its uses will interest every owner who comes into your shop.

KEY Graphite Paste is easy to sell. It turns over fast in stock, and insures nice profits, worth while.

Besides you can use it in your own shop work. It makes friends and money wherever applied. Send the coupon for a FREE trial sample.

KEY BOILER EQUIPMENT CO.
27th and McCasland Ave., East St. Louis, Ill.

--GENEROUS SAMPLE FREE--

Key Boiler Equipment Co.,
27th and McCasland Ave., East St. Louis, Ill.
Please send me without charge or obligation a sample
of Key Graphite Paste.

Name.....
Business.....
Address.....
Jobber's Name.....

M.A. 6 18 25

Index to the

The Advertisers' Index is published as a convenience and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

A. C. Spark Plug Co.	73	Crosley Radio Corp.	102
Adams Mfg. Co.	102	Curtis Pneumatic Mach. Co.	100
Adjustable Bearing Co., Inc.	98		
Akron-Selle Co.	102		
Albertson & Co.	68	Dalton & Balch	103
Allen Mfg. Co.	100	Dieringer, E. T.	98
American Chain Co.	100	Du Pont de Nemours, E. I. & Co.	61
Amer. Hamm. Piston Ring Co.	57-60	Durant Motors, Inc.	97
Amer. Sales Book Co., Ltd.	100		
Ames, B. C., Co.	101	Eaton Axle & Spring Co.	82
Automotive Fabric Equip. Co.	101	Edison Mazda Lamp Works	Bk. Cov.
		Empire Tire & Rubber Co.	51
Bearings Co. of America	101	Feasels, H. L., Laboratory	102
Bellevue Mfg. Co.	103	Flower City Specialty Co.	100
Bosch, Amer. Magneto Corp.	Fol. 90	Follett Time Recording Co.	101
Bosch, Robert, Magneto Co.	103	Fredericks, H. M., Co.	99
Bowser, S. F., & Co.	102		
Bradley Motor Prod. Co.	102	G. H. Tension Ring Co., Inc.	103
Broderick & Bascom Rope Co.	105	Gabriel Mfg. Co.	86
Brown-Lipe Gear Co.	92	Gates Rubber Co.	88
Brunner Mfg. Co.	102	Gemeo Mfg. Co.	102
Buick Motor Co.	1	General Distributing Co.	99
Burroughs Adding Machine Co.	2	General Electric Co.	91
		General Tire & Rubber Co.	69
Cadillac Motor Car Co.	47	Gilmer, L. H., Co.	93
Chevrolet Motor Co.	90	Goodrich, B. F., Rubber Co.	Ft. Cov.
Chicago Roller Skate Co.	102	Goodrich-Lenhart Mfg. Co.	96
Chilton Automobile Directory	80 & 81		
		Pack	
Chrysler Sales Corp.	8	Peel	
Cincinnati Victor Co.	51	Petr	
Classified Advertising Section	103	Pier	
Conneaut Packing Co.	102	Pres	
Cooper Mfg. Co.	102		
Hall Mfg. Co.	89		
Hayes Wire Wheel Co.	55		

Advertisements

Hobart Bros. Co. 103 Quincy Compressor Co. 100
 Hempy-Cooper Mfg. Co. 106

James Motor Valve Co. 103 Ramsey Accessories Mfg. Corp. 7
 Johns-Manville, Inc. 77 & 78 Rickenbacker Motor Co. 79
 Rollin Motors Co. 76
 Rushmore Laboratory 71 & 75

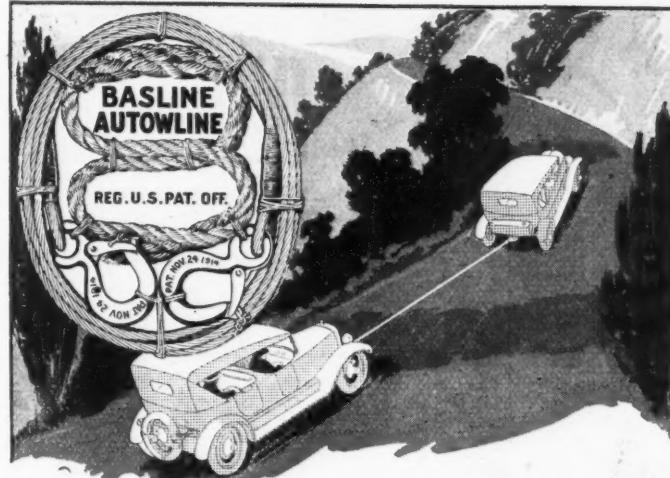
K-D Mfg. Co. 99 Safe-T-Stat Co. 103
 Key Boiler Equip. Co. 104 Staynew Filter Corp. 84
 Kingsley-Miller Co. 100 Stewart-Warner Speed. Corp. 70 & 71
 Kissel Motor Co. 103 Storm Mfg. Co. 96
 Klean-Rite Auto Laundry Co. 100 Studebaker Corp., The 5
 Kokomo Elec. Co. 72 Stutz Motor Car Co. 49

Lancaster Tire & Rubber Co. 95 Thermoid Rubber Co. 66 & 67
 Laurel Motors Corp. 101 Thompson Products, Inc. 102
 Linde Air Products Co. 50 Thomson Mfg. Co. 102
 Lorentzen Headlight Kontrol, Inc. 100 Timken Roller Bearing Corp. 100
 Turner Mfg. Co. (Ind.) 102
 Turner Mfg. Co. (Kansas City) 56

Manhattan Rubber Mfg. Co. 64 U. S. Elec. Tool Co. 100
 Manley Mfg. Co. 2nd Cov. Universal Industrial Corp. 100

Nash Motors Co. 6 Walden-Worcester, Inc. 100
 New Era Spring & Spec. Co. 65 Wheeler-Schebler Carb. Co. 87
 Norlipp Co. 53 Williams Bros. Aircraft Corp. 3rd Cov.
 Northwestern Chemical Co. 3 Willys-Overland, Inc. 62 & 63
 Woods Engineering Co. 100

Packard Electric Co. 102 Yavapai Onyx Mining Corp. 101
 Peck Spring Co., The 98 Petry, N. A., Co. 96
 Pierce-Arrow Motor Car Co. 52 Zenith-Detroit Corp. 102



Through the Ozarks With Autowline!

The Tale of a 55 Mile Tow-Home

You motorists who for some reason or other have been putting off the buying of a Basline Autowline—read of the experience of Mr. Guy Oliver, of the Oliver Electric Co., St. Louis, who writes us as follows:

"Last month I was driving my touring car out around St. Clair, Mo., when I had a serious breakdown.

"Luckily, a friend happened by in a 48-Pierce-Arrow and he offered to tow me in to St. Louis, a distance of 55 miles, with an Autowline.

"If there are any rougher roads anywhere than in the foothills of the Ozarks, I'd like to see them. Frankly, I was very skeptical about your Autowline standing the gaff of that long, hard journey home.

"But home we finally did reach, thanks to Autowline, and the whole affair made such an impression on me that I am writing you about it. If there is anything a motorist really ought to carry with him all the time, it is Autowline. It's like a life preserver—not thought about until needed, and then you simply can't get along without it."

Money for Jobbers and Dealers:

Basline Autowline pays you a good profit and sells well. Push it this season. Write for new Price List.

Broderick & Bascom Rope Company
ST. LOUIS—NEW YORK

GR-195

**BASLINE
AUTOWLINE**

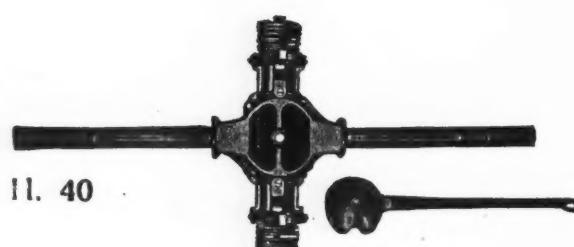


HEMPY-COOPER

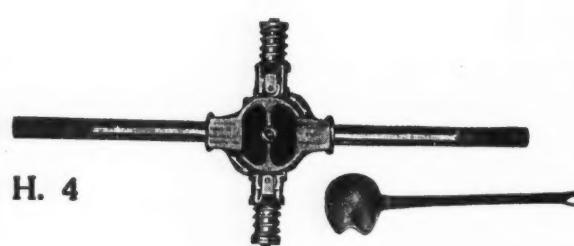
Rebabbitting Appliances

—Help You Sell More Fordson Tractors

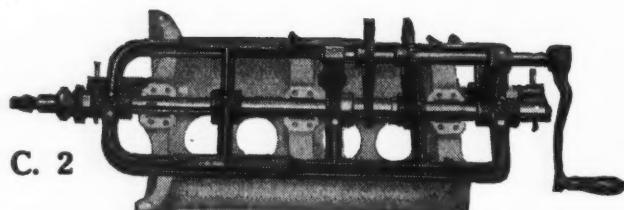
C. 17 Babbitt Furnace and Torch. Melts babbitt ready for pouring while removing old bearings from cylinder block. Removes old bearing in 40 seconds. Leaves clean dry surface for new bearing.



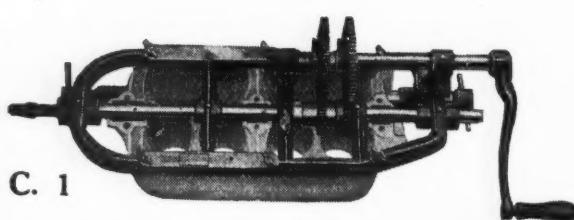
II. 40



H. 4



C 2



C. 1

HIS neighbor's Fordson standing idle for want of bearings keeps many a farmer from buying. He's afraid of their upkeep cost. Humpy-Cooper Rebabbitting Equipment solves that problem. Enables you to finish a set of Fordson Bearings ready for the crankshaft in less than an hour. Costs but \$2.50 for time and material. And the job's as good as new.

The old-fashioned way of reconditioning bearings takes from 3 to 8 hours. Gives you a doubtful job. Costs you \$6 to \$18—and maybe a customer!

H. 40 Babbitt Pouring Mold—babbitts bearings in Fordson Cylinder Block. Casts flanges on end-thrust bearings. Shears off the core.

H. 4 Babbitt Pouring Mold— babbitts bearings in Ford Cylinder Block. Together with Models C. 17 and C. 1 it turns out a set of bearings ready for the crankshaft in 20 minutes at an expense of \$1.50 for time and material.

C. 2 Bores Fordson Main Bearings—bores all three bearings in one operation in perfect alignment. Adjustable to worn crankshafts. Complete with gauge for setting cutting tools. Also gauge for measuring facing of end-thrust bearing and socket for electric drill. Centers from cam-shaft opening. Accurate to $\frac{1}{2}$ -1000th of an inch.

C. 1 Bores Ford Main Bearings— Same machine as C. 2 except made for Ford bearings.

Call Your Jobber— 65 leading shop equipment jobbers handle Hemy-Cooper Rebabbitting Appliances. Ask the one nearest you for full details, prices, etc., or send for our Free Catalog.

Hempy-Cooper Mfg. Co.

412 Archibald

Kansas City, Mo.

EXPORT OFFICE—Stevens & Co., 375 Broadway, New York City.



O.K. That's what over 2 million Ford owners say—

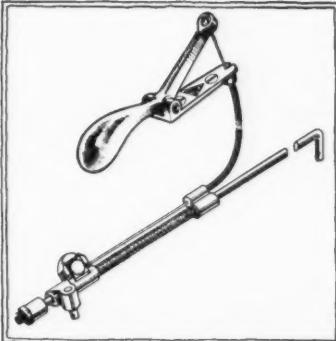
Ford turns out two automobiles—the Lincoln and the Ford.
Both good automobiles at different prices.

United States Rubber Company turns out two tires—the Royal Cord and the Usco Cord.
Both good tires at different prices.

Williams Bros. Aircraft Corporation are the only manufacturers that offer you as a dealer exactly the same sort of a sensible proposition on Ford foot throttles.

The Williams "Regular" Accelerator is in appearance and performance the finest Ford foot throttle on the market. It retails for \$2.50.

The Williams "Junior" Accelerator retails for \$1.50 and fills the big demand among those who want a low priced Ford foot throttle—that is known, guaranteed and of proven dependability.

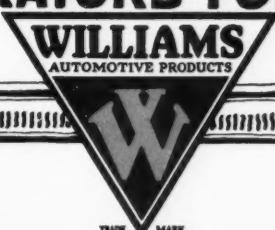


Both these foot throttles bear the Williams name—
your guarantee of quality.

Warehouse stocks carried
in New York and Chicago.

**WILLIAMS BROS.
AIRCRAFT CORP.**
25th and Potrero Ave.
SAN FRANCISCO, CAL.

WILLIAMS ACCELERATORS FOR FORDS





Ten thousand
outdoor posters
flash this emblem—

*the mark
of a reliable dealer*



Put it on your door or window. It says:
"Here's the place to buy

EDISON MAZDA LAMPS
A GENERAL ELECTRIC PRODUCT

